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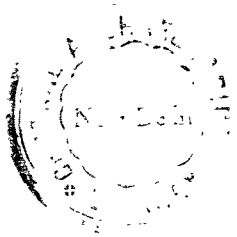
THE JOURNAL

OF THE

ROYAL ANTHROPOLOGICAL INSTITUTE

OF

GREAT BRITAIN AND IRELAND.



VOL. LIX.

PUBLISHED BY THE

Royal Anthropological Institute of Great Britain and Ireland.

52, UPPER BEDFORD PLACE, RUSSELL SQUARE, LONDON, W.C.1.

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NOTICE.

For convenience of reference, all volumes of the new imperial octavo series which began in 1898 are numbered in continuation of the old demy octavo series. Vols. I–XXVII. Thus Vol. I of the imperial octavo series=Vol. XXVIII of the old series: and the present Vol. LIX corresponds to N.S. Vol. XXXII.

The Index to the present volume includes an index to the Institute's monthly publication MAN for the year of issue 1929.

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JOURNAL

OF THE

ROYAL ANTHROPOLOGICAL INSTITUTE

OF GREAT BRITAIN AND IRELAND.

MINUTES OF THE ANNUAL GENERAL MEETING.

TUESDAY, JANUARY 29TH, 1929.

HELD AT 52, UPPER BEDFORD PLACE.

PROF. J. L. MYRES, M.A., D.Sc., *President, in the Chair.*

The Minutes of the last Annual General Meeting were read and confirmed.

The PRESIDENT appointed Mr. W. BARNARD and Mr. W. B. THOMPSON as Scrutineers, and declared the Ballot open.

The PRESIDENT presented one of the Rivers Medals for 1928 to Mr. E. TORDAY, for his anthropological work in the field of the Belgian Congo. The PRESIDENT read a letter from Mr. S. H. RAY, the recipient of the second Medal presented for 1928, regretting his inability to be present, owing to serious illness.

The HON. SECRETARY read the Report of the Council for 1928, which was accepted.

The HON. TREASURER read the Financial Report for 1928, which was also accepted.

The PRESIDENT then read his Address on "The Science of Man in the Service of the State."

The SCRUTINEERS delivered their Report, and the following were declared duly elected as Officers and Council for 1929–30 :—

President.—Prof. J. L. Myres, O.B.E., M.A., D.Sc., F.B.A., F.S.A.

Vice-Presidents.

Prof. H. J. Fleure, D.Sc.
H. S. Harrison, D.Sc.
Prof. G. Elliot Smith, M.A., Litt.D., D.Sc., M.D., F.R.S.

Hon. Secretary.—E. N. Fallaize, B.A.

Hon. Treasurer.—G. D. Hornblower, O.B.E., B.A.

Hon. Editor.—H. J. Braunholtz, M.A.

Council.

H. G. Beasley.
C. O. Blagden, M.A., D.Litt.
M. C. Burkitt, M.A., F.S.A.
L. C. G. Clarke, F.S.A.
K. de B. Codrington, M.A.
J. H. Driberg, M.A.
Miss M. E. Durham.
Prof. R. Ruggles Gates, Ph.D.
M. Ginsberg, M.A., D.Litt.
W. L. Hildburgh, M.A., Ph.D., F.S.A.
L. W. G. Malcolm, M.Sc.
B. Malinowski, D.Sc.
Prof. F. G. Parsons, F.R.C.S.
Capt. G. Pitt-Rivers, B.Sc.
S. H. Ray, M.A.
F. C. Shrubsall, M.A., M.D.
Chas. Singer, M.D., D.Litt.
Rev. E. W. Smith.
E. Torday.
R. W. Williamson, M.Sc.

A hearty vote of thanks to the President for his Address was proposed by Mr. H. J. E. PEAKE, who asked in the name of the Institute that the President would allow it to be published in the Institute's *Journal*. The motion was seconded by Prof. F. G. PARSONS and carried by acclamation.

The Institute then adjourned.

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REPORT OF THE COUNCIL FOR THE YEAR 1928.

At the close of the year 1928, the Council is once more in a position to report continuous and steady progress in the various branches of the Institute's activities. In so far as the extent of those activities is dependent upon finance, the Institute is indebted to the Trustees of the Laura Spelman Rockefeller Memorial Fund, from whom the annual instalments of the grant of $17,000 continue to be received, and to whom the Council tenders grateful thanks. While, however, this generous donation, coming originally at a critical stage in the Institute's efforts to extend its work, has proved of inestimable advantage, it should also be noted that the Institute is sharing in a benefit accruing to anthropological studies generally from the trend of theory and practice in imperial affairs and from a certain, if slow, movement in public opinion. Belief in the value of anthropological studies in the administration of races of non-European culture has gained, and continues to gain, ground steadily both at home and in the dependencies. Again, the interest of the public in the results of anthropological investigation is growing, as may be gauged by the increasing attention now paid by the daily and periodical press to the progress of research and to discoveries in the field. This is reflected in the work of the Institute on one side by the number of enquiries for information on specific points or for guidance on subjects of study, on another by a constant growth in the number of applications for Fellowship.

Fellows.

The statistics of Membership for the year are as follows :—

—	Total, Jan. 1st, 1928.	Loss by death or resignation.	Since elected.	Total, Jan. 1st, 1929.
Honorary Fellows	36	—	2	38
Local Correspondents	18	—	—	—
Deduct Ordinary Fellows ...	2			
	— 16	—	—	16
Affiliated Societies	5	—	—	5
Ordinary Fellows :—				
Compounding	48	—	1	49
Subscribing	626	46	42	622
	731	46	45	730

The following have died in the course of the year :—

H. J. A. Leveson (elected 1909) ; Sir Wm. Church (1874 : Obituary notice, *Man*, 1928, 106) ; C. J. Tabor (1899) ; Dr. H. E. McConnell (1911) ; A. C. Mace (1901) ; Baron A. von Hügel (1897 : Obituary notice, *Man*, 1928, 126) ; and R. F. Gaunt (1927).

Although not falling within the period under review, the Council cannot pass on without a reference to the lamented death of Sir William Boyd Dawkins, which took place on January 15th. 1929.

Premises.

For the present the Institute is able to retain the whole of the house for its own purposes without undue financial strain. Good use is made of the additional rooms for temporary exhibitions, Council, Committee, and small public meetings, and for the storage of lantern slides and photographs. The British Philosophical Society and the British Psychological Society continue to meet at the Institute, the latter Society housing its books in the Institute's Library, and hospitality has been extended to the Prehistoric Society of East Anglia for its London meetings. Office accommodation continues to be provided for the Folklore Society.

Library.

The Report of the Librarian is as follows :—

The accessions for the year, January, 1928, to January, 1929, were 329 books and 220 pamphlets ; 44 books were purchased, 54 books were presented to the Library, and the remainder sent for review in the Society's publications.

The issues for 1927–28 were 980 books borrowed by 100 Fellows, and for 1928–29, 930 books borrowed by 89 Fellows. An analysis of the issues for 1928–29 records the numbers borrowed in the following subjects : Prehistory, 74 ; Sociology, 75 ; Religion and Folklore, 47 ; Physical Anthropology, 36 ; Cultural Anthropology and Miscellanea, 79 ; Europe, 63 ; Africa, 156 ; America, 42 ; Asia, 59 ; Oceania, 71 ; bound periodicals, 228.

Thirty-seven books were borrowed by the Central Library for Students, and 7 volumes borrowed through that Library.

The Subject-Catalogue to the books, pamphlets, and periodicals has been continued, and 10,000 cards have been added. Some 3,000 books, 1,200 pamphlets, and 580 numbers of current periodicals have been catalogued during the past year.

A Shelf-List to the books is in process of compilation and approaches completion.

Six new periodicals have been added to the exchange list.

The binding-register records that 122 books and 101 periodicals have been bound. The position with regard to binding is extremely serious, as the Institute is barely holding its own in this respect. 131 periodicals are regularly bound, though a certain number of these do not need to be bound every year. A large number of the newly acquired books require binding, and there are many books in the Library which should be *rebound*. The great accumulation of periodicals, kept at present in the cellars, should be bound if they are to be of service to the Fellows, but very little progress in this direction has been made during the past year.

A catalogue of the valuable Photograph Collection of the Institute has been started, and some 650 photographs classified and catalogued. The Librarian is greatly indebted to Mr. E. J. Dingwall for his help in the preliminary work of classification.

A catalogue of the books and periodicals in the Library of the British Psychological Society, which is housed at the Institute, has been made.

An arrangement has been made with the International Institute of African Languages and Cultures, whereby their members may use the Library for research purposes, and, during the past year, facilities have been afforded to persons who are not Fellows of the Institute for reading, research, and information.

The Library is greatly indebted to donors and reviewers of books, and, in particular, to Dr. Hildburgh for the presentation of two cases for the Subject-Catalogue and to Mr. E. J. Dingwall for pecuniary assistance.

Publications.

The *Journal*.—During the year two parts of the *Journal* have been published, vol. lvii (ii) and vol. lviii (i). Office sales were 110 and 144 respectively, as against 116 and 131 at the corresponding date last year. The cost of the *Journal* continues to be heavily subsidized from the Laura Spelman Rockefeller Grant. When this ceases only a large increase in the number of Fellows will warrant, or indeed make possible, the maintenance of the present standard.

Man.—Twelve numbers of *Man* have been published during the year of which five were double numbers. Office sales amounted to £266 19*s*. 7*d*., as against £242 5*s*. 10*d*. last year. A reference to the accounts will show that *Man* again has been very nearly self-supporting.

Occasional and Other Publications.—One Occasional Publication has been issued during the year—*Anglo-Saxon Skull Contours*, a portfolio of diagrams with explanatory notes by Professor F. G. Parsons. The sale of the various issues of "Occasional Publications" during the year, largely owing to the demand for the

second part of Dr. Frankfort's *Studies in Early Pottery of the Near East*, has been very satisfactory.

In two cases the unusual course has again been followed of issuing on sale advance copies of a paper to be published in the *Journal*—the "Report of the British Museum Expedition to British Honduras" (following the precedent of the previous year) and the studies of the Gibraltar Skull by Miss D. A. E. Garrod and others.

The Indian Antiquary continues to be published under the auspices of the Institute, and twelve monthly numbers have been issued from Bombay. Although up to the present no financial liability has accrued to the Institute on behalf of this publication, its position would be much strengthened by a larger subscription list. Like *Man*, *The Indian Antiquary* is not included in the Fellow's subscription, but a special subscription rate is available to Members of the Institute.

Meetings.

Seventeen Ordinary Meetings and 1 Special Meeting were held during the year, as against 14 Ordinary and 1 Special in the preceding year. The Huxley Memorial Lecture was delivered in the Rooms of the Royal Society, at Burlington House, on November 27th.

Huxley Memorial Medal.

The Huxley Memorial Medal for 1928 was awarded to Sir Arthur Keith, F.R.S., who delivered the Huxley Memorial Lecture on November 27th, the subject for the lecture being "The Evolution of the Human Races."

Rivers Memorial Medal.

Two Rivers Memorial Medals were awarded in 1928—one to Mr. Sidney H. Ray, for his research in Linguistics in the Torres Straits, and one to Mr. Emil Torday, for his researches in the ethnology and ethnography of the Congo Basin.

Indian Research.

Although no meetings of the Indian Research Committee have been held during the year, work has continued through the various sub-committees. Much valuable work was also done in the preparation of a memorandum for submission to Council in reference to the national collections illustrating Indian culture in view of the enquiries being conducted by the Royal Commission on the National Museums.

Edinburgh Branch.

The position of the Branch has been strengthened by the addition to the financial subsidy allowed by the Council. Meetings are held regularly and are well attended.

An excellent and varied programme has been provided which has included practical demonstrations of various classes of exhibits in the Edinburgh Museums.

Derbyshire Committee.

Excavation has been carried on actively under the Joint Committee of the British Association and the Institute. On the resignation of Sir William Boyd Dawkins, Mr. M. Burkitt was appointed Chairman. A paper on recent work was presented to the Institute by Mr. A. Leslie Armstrong, who is in charge of the excavation, on November 20th.

Rivers Memorial Fund.

The capital sum accruing from subscriptions to the Rivers Memorial Fund has now been handed to the Institute in accordance with the decision of the subscribers, and has been invested in the names of the Institute's Trustees. The interest on the investment will be used in the promotion of research and in assisting in the publication of the results of research. The Fund will be administered by a Committee consisting of the Presidents for the time being of the Royal Anthropological Institute, the British Psychological Society, and the Folklore Society, together with Professor G. Elliot Smith and Sir Henry Head.

Appeal and Research Committee.—Joint Committee.

A public appeal for funds for anthropological research has been prepared by the Appeal Committee, submitted to and approved by the Joint University Committee, and approved by the Council. It will be issued shortly as an embodiment of the considered views of all bodies in this country who are interested in the teaching of and research in Anthropology or the financial requirements of Anthropological Research.

At its constitution it was intended that the Appeal Committee should at a later stage deal with questions relating to research. This part of its function has now been delegated by the Council to the Joint Committee as the more fully representative body.

The Joint Committee has also had under consideration the present position of method in anthropometric measurement. It has recommended to the Council that a memorandum prepared by Miss Tildesley be circulated among foreign anthropologists with a view to concerted international action to secure reform.

Excavations in the Fayûm.

Miss Caton-Thompson's expedition to the Fayûm was brought to a successful conclusion. Although the original estimate of £1.000 for the cost of the expedition was exceeded, the appeal for funds brought in sufficient to cover the amount which

the Institute had undertaken to assist in finding, and at the same time to allow the work to be prolonged for a greater period than was originally intended. This extension was made desirable by the importance of the results which were being obtained. An exhibition of the finds allocated to the Institute under the regulations of the Egyptian Department of Antiquities was held at the Institute in July. The finds have now been distributed among various museums by a committee representing the subscribers.

The Council is now making application for a further concession in Egypt to enable Miss Caton-Thompson to carry on investigation at another site in the season 1929–30, on her return from South Africa. It has not yet been possible to procure any estimate of the amount required for this excavation, but the cost will not be as heavy as that of the preceding expedition. A statement will be issued as soon as possible, and the Council trusts that the Fellows and others will respond as generously as on the previous occasion.

Excavations in France.

At the invitation of foreign anthropologists, Great Britain not being represented in the exploration of the French palæolithic caves, the Council is making application to the French authorities for a site in the Dordogne. It is expected that a generous gift of £50 from Dr. J. af Klercker, of Skanor, Sweden, will be sufficient to cover expenses.

The Royal Commission on the National Collections and Museums.

At the beginning of the year the Council was invited to give evidence before the Royal Commission on the National Collections and Museums. A memorandum was submitted to the Commission by the Council which dealt with all sides of the problem as affecting Anthropology: but in particular with the inadequacy of the accommodation and the exhibition of ethnographic material, having regard to the imperial position of Britain and the obligations involved in our administration of subject races. Stress was also laid on the inadequate provision for teaching and research. The President, Professor J. L. Myres, Mr. Henry Balfour, and Dr. Seligman were heard in evidence before the Commission. Among other points they stressed the paramount necessity for collections representative of the culture of our subject races, in order to provide practical instruction in the training of the officers whose duties will be to govern those races. In the Interim Report published in September, the Commissioners, while deferring discussion of the situation as it affects the national ethnographic collections, made sympathetic reference to the Council's plea for fuller recognition of the nation's duty as an imperial power in this matter.

International Congress of Americanists.

At the International Congress of Americanists held in New York in September last, the Institute was represented by Mr. H. G. Beasley: Mr. T. A. Joyce was also present, representing the British Museum. It is to be regretted that, notwithstanding the urgent suggestion put forward by the Institute, Great Britain, almost alone among nations of any importance intellectually, was not officially represented.

Conclusion.

In concluding this Report, the Council would wish to emphasize certain aspects of the Institute's work outlined above.

The aim and policy of the Council, as representing the Fellows, is to endeavour to promote the study of the science of man, and to further recognition of its application to the administration of imperial affairs by utilizing the resources of the Institute to the full. The circulation of the *Journal* and other publications not being restricted to Fellows alone, but being on sale to the public, ensures that the latest results of anthropological science are made as widely available as possible. Through its staff, its Fellows, and its Joint Committee, which includes representatives of all Universities and other bodies interested in Anthropology throughout the kingdom, the Institute has at its disposal a wide range of specialized knowledge. This is available for, and is utilized by, Government Departments and other public bodies as well as private individuals. Its Library and the collections of photographs, manuscripts, and lantern slides are open for consultation and study to properly accredited members of the public who are seriously interested in the science of Anthropology. In constituting its Joint Committee on a broad basis, the Council has ensured the complete representation of anthropological opinion throughout the kingdom, both inside and outside the Institute, thus making the Institute a clearing-house for Anthropology in a very real sense: while, by initiating anthropological investigations and assisting them from its own funds and by funds raised by public appeal, it has promoted researches which would not otherwise have been undertaken. Holding as it does to the importance of Anthropology as a study of the highest philosophic moment in itself, and, as applied to practical affairs, of vital interest to humanity, the Council appeals with confidence to its Fellows to make every effort to further these objects by securing an increased membership, thus giving increased support to the Institute financially, as well as by any other means within their power.

TREASURER'S REPORT FOR THE YEAR 1928.

THE accounts for 1928 show, as before, a balance of income over expenditure: the amount is £300 odd, against £260 last year, but this would have been augmented by another £100 for cheques received at the end of the year but not paid in, through unavoidable circumstances, till the beginning of this year.

Subscriptions have increased by nearly £90, or 7½ per cent.; the sale of the *Journal* by £26, or 9 per cent.; and that of *Man* by £30, or nearly 7 per cent. Thus we may credit the Institute with a general material growth of about 7 per cent.

The *Journal* cost more this year than last by the apparent sum of £220, but from this must be deducted about £84 for grants made for specially costly items: the net cost to the Institute, deducting the allocation from the Laura Spelman Rockefeller Memorial Fund, is about £350, against about £180 last year; the increase is chiefly accounted for by the larger amount of material published in one year, including the list of Fellows and that of Periodical Publications in the Library; this year's figures are likely to be nearer the normal. At the same time, it should be remembered that the publication of the *Journal* constitutes one of the principal services to the Fellows—not to say the public at large—and the cost must naturally increase to some extent with the growth of the Institute.

The Library Account shows an adverse balance of £33 odd as compared with that of the previous year, but the cost is small in view of the high standard that it is now possible to maintain in the Library service, so valuable to Fellows and to those of the public who, through the Central Library or other channels, have access to it. Once again we must be grateful to the Laura Spelman Rockefeller Memorial Fund for making this standard possible, as well as for the great aid it has afforded to the *Journal* and "Miscellaneous Publications." It may be added that included in the item "Library Sales" is a much appreciated donation from a Fellow of two guineas; help of this kind, or by the presentation of books, is ever valuable.

The credit balance for 1928 has been diminished by £117 odd through the cost, less purchases made, of anthropometrical instruments, which were made to order with a view of selling them at cost price to investigators who might be unable otherwise to obtain them; this sum will be gradually made good as purchases are effected.

The amount of the Rivers Memorial Fund handed over last November to the Institute, in trust, was £864 19*s*. 3*d*.; it has been invested in 4 per cent. Consols.

Under the heading "Special Expedition Account" is entered a sum of about £300, being the amount subscribed through the Institute to the Fayûm expedition

carried out by Miss Caton-Thompson under the auspices of the Institute; other sums were paid directly, and the whole will be found in the list of Subscribers in the Annual Report. A sum of £50 must also be noticed under this heading, the generous gift of Dr. Klercker towards the expense of an expedition in the palæolithic regions of the Dordogne; this sum, however, though received at the end of last year, will appear only in this year's accounts.

The balance of the "Housing Account" is the same as in the previous year, £374 odd, no new contributions having been made. The account has been kept to allow of further contributions towards the expense of moving to our present premises. The Institute will, of course, be very happy to receive additions to the generous result of former appeals.

(*Note.*—On the recommendation of the Auditors, the form of the annual Balance Sheet has been somewhat modified. The principal change is in the treatment of the Balance of the Revenue Account, which is now transferred to the Capital Account and will henceforth cease to appear in the yearly Revenue Account.)

G. D. HORNBLOWER,
Hon. Treasurer.

ROYAL ANTHROPOLOGICAL INSTITUTE

ACCOUNTS FOR

PAYMENTS.	£ s. d.	£ s. d.
		REVENUE
Rent, Housekeeping, &c.		275 5 7
"Journal"		979 13 11
"Man"		519 3 11
Salaries		279 12 8
Advertising		13 16 0
Stamps and Parcels		126 6 1
Telephone and Telegrams		15 16 5
Printing, Stationery, etc.		35 4 10
Coal, Gas, and Light		49 13 9
Lantern, etc.		9 9 0
Insurance—		
Fire and Employers' Liability	23 7 10	
Redemption of Lease	198 18 4	
		222 6 2
Subscriptions to Journals and Directories		13 5 8
Bank Charges		1 13 4
Typewriter Accessories		3 5 4
Travelling		1 13 10
Auditors' Fees		5 5 0
Subsidy to Edinburgh Branch		10 0 0
Huxley and Rivers Medals		1 10 9
Sundries		21 12 8
Balance transferred to Capital Account		1,581 19 6
		£4,166 14 5

OF GREAT BRITAIN AND IRELAND.

THE YEAR 1928.

ACCOUNT.

RECEIPTS.	£	*s.*	*d.*	£	*s.*	*d.*
BALANCE BROUGHT FORWARD, 1ST JANUARY, 1928				1,277	0	11
SUBSCRIPTIONS :—						
Current	1,246	14	5			
Arrears	79	7	11			
Advance	27	11	1			
Life	31	10	0			
				1,385	3	5
ENTRANCE FEES				56	11	0
SALE OF "JOURNAL" REPRINTS AND COPYRIGHT FEE	286	8	8			
Add Grant from Laura Spelman Rockefeller Memorial Fund Account	259	17	5			
Grants for Special Items	83	15	0			
				630	1	1
SALE OF "MAN"	477	4	8			
Add Grant from Laura Spelman Rockefeller Memorial Fund Account	41	19	3			
				519	3	11
SALE OF "HUXLEY LECTURE"				11	3	0
ADVERTISING				19	3	7
DIVIDENDS AND INTEREST				156	4	2
,, (AMERICAN DOLLAR BONDS)				29	18	4
HIRE OF LECTURE ROOMS				82	5	0
				£4,166	14	5

ACCOUNTS FOR

CAPITAL

	£	*s.*	*d.*
BALANCE CARRIED TO BALANCE SHEET	9,410	11	2
	£9,410	11	2

LIBRARY

	£	*s.*	*d.*
BALANCE, 1927	83	8	10
BOOKS AND BINDING	134	16	1
SALARY OF LIBRARIAN	200	0	0
PETTY CASH PAYMENTS	9	0	9
	£427	5	8

HOUSING

	£	*s.*	*d.*
BALANCE, 1927	374	17	4
	£374	17	4

LAURA SPELMAN ROCKEFELLER

	£	*s.*	*d.*
TRANSFER TO LIBRARY ACCOUNT	300	0	0
TRANSFER TO "JOURNAL" ACCOUNT	259	17	5
TRANSFER TO "MAN" ACCOUNT	41	19	3
TRANSFER TO MISCELLANEOUS PUBLICATIONS ACCOUNT	120	0	0
BALANCE	723	9	4
	£1,445	6	0

THE YEAR 1928—continued.

ACCOUNT.

	£ s. d.	£ s. d.
BALANCE BROUGHT FORWARD, 1st JANUARY, 1928		7,758 17 8
INCREASE IN VALUE OF £300 METROPOLITAN CONSOLIDATED 3½% STOCK—		
Valued 31st December, 1928, at 98¾	296 5 0	
Valued 31st December, 1927, at 97½	291 15 0	
		4 10 0
INCREASE IN VALUE OF £886 BURMA RAILWAY STOCK:—		
Valued 31st December, 1928, at 122	1,080 18 5	
Valued 31st December, 1927, at 117	1,036 12 5	
		44 6 0
INCREASE IN VALUE OF £800 CONVERSION LOAN 4½%:—		
Valued 31st December, 1928, at 99	792 0 0	
Valued 31st December, 1927, at cost price	771 2 0	
		20 18 0
BALANCE OF REVENUE ACCOUNT		1,581 19 6
		£9,410 11 2

ACCOUNT.

	£ s. d.
TRANSFER FROM REFUNDS RECEIPTS ACCOUNT	0 9 11
SALE OF BOOKS	9 19 9
GRANT FROM THE LAURA SPELMAN ROCKEFELLER MEMORIAL FUND ACCOUNT	300 0 0
BALANCE	116 16 0
	£427 5 8

ACCOUNT.

	£ s. d.
BALANCE, 1928	374 17 4
	£374 17 4

MEMORIAL FUND ACCOUNT.

	£ s. d.
BALANCE, 1927	723 9 4
GRANT	721 16 8
	£1,445 6 0

ACCOUNTS FOR

ANTHROPOMETRICAL

	£	*s.*	*d.*
PURCHASES	137	5	0
	£137	5	0

MISCELLANEOUS

	£	*s.*	*d.*
BALANCE, 1927	161	17	4
PRINTING, ETC.	198	8	6
	£360	5	10

TRIBAL

	£	*s.*	*d.*
PAID TO THE COLONIAL OFFICE	0	2	6
BALANCE	0	18	3
	£1	0	9

RESEARCH AND

	£	*s.*	*d.*
BALANCE, 1928	214	5	7
	£214	5	7

SPECIAL

	£	*s.*	*d.*
PAID TO THE CATON-THOMPSON FUND	301	4	0
BALANCE	11	11	0
	£312	15	0

THE YEAR 1928—continued.

INSTRUMENTS ACCOUNT.

	£	s.	d.
BALANCE, 1927	3	12	0
SALES	16	7	6
BALANCE, 1928	117	5	6
	£137	5	0

PUBLICATIONS ACCOUNT.

	£	s.	d.
SALES	88	9	5
GRANT FROM THE LAURA SPELMAN ROCKEFELLER MEMORIAL FUND ACCOUNT	120	0	0
BALANCE, 1928	151	16	5
	£360	5	10

MARKINGS ACCOUNT.

	£	s.	d.
BALANCE, 1927	0	15	9
SALES	0	5	0
	£1	0	9

APPEAL FUND ACCOUNT.

	£	s.	d.
BALANCE, 1927	209	0	2
INTEREST	5	5	5
	£214	5	7

EXPEDITIONS ACCOUNT.

	£	s.	d.
BALANCE, 1927	18	3	0
DONATIONS	294	12	0
	£312	15	0

BALANCE SHEET, 31st DECEMBER, 1928.

	£ s. d.	£ s. d.
Creditors for		
"Tribal Markings"	0 18 3	
"Notes and Queries"	0 5 0	
		1 3 3
Laura Spelman Rockefeller Memorial Fund Account	723 9 4	
Research and Appeal Fund Account	211 5 7	
Special Expeditions Account	11 11 0	
Rivers Memorial Fund (Trust Account)	864 19 3	
		1,814 5 2
Capital Account		9,410 11 2
		£11,225 19 7

	£ s. d.	£ s. d.
House, Value of Lease at Contract Price		2,150 0 0
Books, Publications and Stock		3,493 6 0
Furniture		200 0 0
£886 Burma Railway Stock, at £122	1,080 18 5	
£300 Metropolitan Consolidated 3½ per cent. Stock, at 98¾	296 5 0	
£800 4½ per cent. Conversion Loan, at 99	792 0 0	
		2,169 3 5
£977 5s 1d 4 per cent. Consols (Rivers Memorial Fund Trust)		864 19 3
American Dollar Bonds, subject to a contingent liability in excess of their value: *see* Treasurer's Report, 1918		—
Subscriptions in Arrears		20 0 0
Miscellaneous publications		151 16 5
Library Account	116 16 0	
Housing Account	374 17 1	
Anthropometrical Instruments Account	117 5 6	
		608 18 10
Balances at Bank:		
Current Account	121 16 7	
Deposit Accounts	1,231 13 6	
Special Deposit (Research and Appeal Fund)	214 5 7	
		1,567 15 8
		£11,225 19 7

We have examined the Accounts of the Royal Anthropological Institute and have obtained all the information and explanations we have required. In our opinion the Balance Sheet at 31st December, 1928, is properly drawn up so as to exhibit a true and correct view of the state of the Institute's affairs according to the best of our information and as shown by the books of the Institute.

JACKSON, PIXLEY & Co.,
CHARTERED ACCOUNTANTS,
Auditors.

38, Coleman Street, London, E.C.2.
28th January, 1929.

PRESIDENTIAL ADDRESS.

THE SCIENCE OF MAN IN THE SERVICE OF THE STATE.

By Professor J. L. Myres, O.B.E., M.A., Hon. D.Sc., F.B.A., F.S.A.

We hear a good deal, nowadays, about two processes, both commended as eminently desirable, the "correlation of the social sciences" and the "application of learning to life." An anthropologist may be expected to have something to say about both of them; and, to bring both topics within the compass of one address, I submit, as a subject for consideration at this anniversary meeting, "The Science of Man in the Service of the State."

Now the correlation of one science with another, and the application of any science to any related art, while in general they cover similar ground, and describe similar operations, seem both of them to include, and occasionally to confuse, two processes which are really distinct. It is one thing, to take over into one branch of science results achieved in another—as the biologist takes over results from the physicist and chemist which are valid for living matter in respect of its physical and chemical qualities. It is quite another, to assimilate the method and outlook of one science to those of another; as is occasionally done, from Plato's time onward, by those who press the analogy between the individual and the state so far as to apply psychological methods and terminology to social and political problems, or the experience of the breeder of horses and dogs to the rectification of those mongrel breeds of mankind who come under the notice of the sociologist.

About six years ago, a small conference of representatives of various "social sciences" took stock, at Oxford, of their respective contributions to what was there described in general terms as Sociology, but seemed to myself—and I think also to some others—to be not so much a master-science, or even a distinct branch of learning, as an attempted synthesis or correlation of certain practical applications of such studies as Law, Religion, Psychology, and Anthropology itself.[1]

A further stage in my own approach to the subject was a debate on the "relations of Anthropology to Social Science," in which I had the honour to take part, at the Liverpool meeting of the British Association in 1923.[2] This had been planned as

[1] Summaries of principal contributions in *Sociological Review*, xv, 1923, pp. 48–54.

[2] Summary in *Man*, 1923, 104; *Proc. Brit. Ass. Adv. Sci.*, 1923 (Liverpool), pp. 458 *ff.*

a sort of return-match to the Oxford conference: but that intention was frustrated by the absence of most of the sociologists. There was, however, general agreement in that debate as to the propriety, and indeed the necessity, both of applying to social problems, in mature communities like those of Western Europe, the same methods of analytical and comparative study which have been employed in the study of those less modern and less complicated societies which are the special concern of the anthropologist: and also of taking into account, more widely and systematically, in social work, the results of anthropological research, so far as they have led to the establishment of any general principles of human behaviour.

It was evident, however, in the Liverpool debate, that the notion of Anthropology as an "applied science" was unfamiliar to some, and was regarded with a certain uneasiness by others. So, though the whole question has since been examined from many points of view in a collection of papers, edited by Drs. William G. Ogburn and Alexander Goldenweiser,[1] to which I had the privilege of contributing a chapter, it has seemed to me that this might be a convenient occasion to carry the same train of thought a little further, and raise the question: in what way, or ways, has Anthropology anything to offer to social studies by way of practical application of its own results, either to the criticism and explanation of social occurrences among ourselves, or to the advancement of human well-being? If I cannot hope to contribute very much to your knowledge, it may nevertheless be possible to clear up some difficulties of method, and close one or two by-ways which lead nowhere.

Anthropology as an Applied Science.

All science consists in the use of common sense to interpret the facts of observation; and it has always two objects in view. The first is to ascertain *what* it is that happens: *how* it happens: and, so far as the relation between cause and effect can enlighten us, *why* it happens. It is in respect of this object that we speak of "pure science" as an attempt to ascertain and formulate truth. The second object, which distinguishes the "applied sciences" from "pure science," is to apply the knowledge thus gained to the ordering of our own lives, and in particular to extend and secure our freedom from the controls and obstacles presented in the course of events around us; to enforce our own control and disposal of those very forces, or processes, of which external nature consists; to use nature, by learning to understand and adapt, reasonably, natural means to human ends; in short, to employ truth to achieve well-being.

I lay some stress on this second aspect because it appears to me to be one of the most fundamental of the great uniformities of human behaviour, that truth is regarded as being also in some sense *good*, and good for man—that is to say, for us. In support of this view let me quote from one of the most suggestive contributions

[1] *The Social Sciences and their Interrelations*, New York, 1927.

to the Oxford conference already mentioned, a paper by Professor J. G. de Montmorency on "Law as a Social Science," in which he tried to formulate the conclusions of jurisprudence about the behaviour of man—about "*man-in-action*," so to speak—in terms which might make them comparable with the conclusions, for example, of Newtonian physics about the behaviour of "*matter-in-motion*." And the first of his "Human Laws of Motion" he formulates, as he says, "with much natural misgiving," in the following form:—

> "A dominant tendency of the Individual man (in direct heredity from an earlier grade of being) is to strive so to regulate the group to which he belongs, as to afford to the group, and therefore to the individual, a maximum protection from the environment."

Here we see restated the thesis of Huxley's *Romanes Lecture* in 1892. In a conscious organism the *primum mobile* is "desire": in a self-conscious organism it is "motive", or, to carry Faust's analysis one stage further,—*im Anfang war der Wunsch*: and in a self-conscious organism, further, self-protection involves the protection of related selves.

Now in the process of ensuring protection from the environment, it is, above all, knowledge that counts; scientifically accurate and intelligibly coherent information about what is actually happening around us. And it would seem to follow that, from the first dawnings of reason and self-conscious effort, ascertainment of truth, and employment of ascertained truth as a guide to conduct, have been among the most fundamental of social obligations, as well as a profound satisfaction of individual need and desire.

This double aspect of man's outlook on that which is around him, and of his instinctive exploration of it, applies equally to the most abstract and to the most concrete forms of knowledge. In the dawn of the Revival of Learning we find Leonardo da Vinci insisting that "mechanics are the paradise of the mathematical sciences, for in them the fruits of the latter are reaped": that "experiment" (by which he meant deliberate human interference with the course of events, and isolation of each kind of thing that happens, each factor in a confused and an obscure result) "is the true interpreter between Nature and Man": and praying "Thou, O God, sell us all good things *for the price of work*." And at the other extreme of utter complexity, in the processes which make up life, and, especially, the life of man, it has been urgent practical need to heal bodily injuries, and cure or prevent disease, which has stimulated and rewarded research into the structures and functions of living organisms. Necessity being the mother of Invention, Physiology and Biochemistry are the daughters of Medicine.

Now it is this practical aspect, this humanitarian lure of "applied science," this claim to justify wisdom by her children, that chiefly distinguishes the Nature-study of the Renaissance from that of the Greeks. And there is good reason for this difference of outlook. Greek science came into being under no such ban of

suspicion, as to its sceptical subversiveness, as was incurred by the men of the fifteenth and sixteenth centuries who challenged Mosaic or Aristotelian or ecclesiastical dogmas about the nature of the world and of man. Anaxagoras and Hippocrates were under no obligation to demonstrate that, however revolutionary their methods, their conclusions were useful as well as obvious. Indeed, if Socrates had been at less pains to improve the conduct of his fellow-citizens, he might have had longer opportunity for mere enquiry into their behaviour.

Still more, in the later age in which we ourselves live, when a rationalized universe has become industrialized as well—when Leonardo's prayer has been terribly and inexorably answered, and we may indeed, as it seems, buy "all good things for the price of work"—it has been for their practical applications that the natural sciences have received their most lavish benefactions from those who command "the price of work," and public attention has been concentrated on those branches of learning which offer most immediate prospect of increased control over the natural resources of this Earth: of increased immunity against the chapter of accidents from lightning-stroke and storm-at-sea, to "the small, unseen, but million-murdering cause" of plague or malaria. But I do not find that they are so ready to pay for research, as yet, into the working or misbehaviour of institutions or ideas.

Probably, indeed certainly, there is reason for this, and if we can discover the reason the "small, unseen, but million-murdering cause" of this blindness, apathy, or paralysis—"stupidity" we will leave our successors to call it—we are half-way to the cure of it.

As there is no reason to suppose that anthropological study is less capable of yielding practical conclusions than any other kind of scientific work, I need not spend further trouble on disproving, in regard to our own science, a distinction which does not exist, even in a phase of civilization which sets such store on utility, and appraises all forms of learning in terms of their applicable results. We are all pragmatists nowadays.

The Double Use of the Phrase "Applied Science."

We should note, however, before going further, that the term "applied science" is itself used in two rather different senses. We distinguish between "pure" and "applied" mathematics, meaning that, in the first, mathematical methods are used for the examination of mathematical problems only—for the investigation (that is) of the properties of numbers and quantities: whereas in the second, mathematical solutions are attempted of problems of physics, such as the properties of force and various states and kinds of matter. Similarly, in physical chemistry or chemical physics we see physical methods applied to chemical problems, and chemical methods to biological problems in biochemistry. In relation to the physical, chemical, and biological studies, geology and geography are applied sciences;

and in relation to psychology, jurisprudence, and economics, history itself is an applied science, though this is perhaps less commonly realized or admitted.[1] We may therefore speak of the application of anthropological methods or conclusions to sociological, or more particularly to economic and political, problems, without any more implication of a practical objective than in these parallel instances.

But commonly when we speak of "applied science" we mean that scientific methods and conclusions are employed for the solution, not of a theoretical, but of a practical problem, as when our knowledge of electricity is applied to street-lighting or transportation, or our knowledge of biological heredity to the improvement of herds and crops; or when the anthropologist advises the administrator as to the admission of "desirable" aliens, or exclusion of "undesirable." It is in this sense that, for Leonardo da Vinci, "mechanics are the paradise of the mathematical sciences," and it was the splendid dream of Plato that his "philosopher king"—of Bacon that his "merchant of light"—would make of politics the "paradise" of science in general, and reap there the fruits of long training in special sciences, as well as in the theory of science in general. Anthropology, too, is itself such a "paradise" of other sciences, for is it not the application, to the problems of human behaviour, of *all* scientific methods capable of throwing light upon them? Its function and scope calls in both historical methods and geographical methods to converge upon its own special problem, how it happens that this or that kind of man *is* what he *is*, and behaves as he *does*, in respect of the resources of nature or the persons of his fellow-men, in this or that regional set of circumstances and at this or that period in the career of humanity as a whole.

Drawbacks to Anthropological Study; and Retrospect of its Developments.

But for fruitful applications of any science to practical problems, it is obviously essential that the information supplied shall be accurate and complete, and that the principles and method of application shall be sound. And it will probably have occurred to some of us that at present neither Anthropology nor any of its specialized sister-studies cuts a very conspicuous or dignified figure among the applied sciences. Yet, recent as Anthropology is among the sciences, it is hardly more recent than chemistry or electrical physics, which hold a very different place there. And there are reasons for this backwardness, and also remedies for it. So we come next to the question, why the anthropological aspect of the humanities has come to be appreciated so slowly and imperfectly. And we must once again begin at the beginning if we are to clear up this matter fully.

Pure science, as we have seen, is the application of reason (that is to say, common sense) to discover and demonstrate (or make obvious to any person of common sense) *what really happens* in the world about us and in ourselves as part of that world.

[1] I have dealt with this aspect of history and geography in my address to the Geographical Section of the British Association (*Proc. Brit. Ass.*, 1928 (Glasgow), pp. 99–117).

Now there is no reason to suppose that the more specifically human phenomenon of sensation, and the various responses to different kinds of sensations, are less amenable than physical or biological data to treatment by the same method of common-sense observation and rational experiment. We contemplate, for example, and have gone some way in establishing, departmental sciences of psychology, logic, economics, morals and jurisprudence, dealing with the behaviour of the human mind, and of human beings in relation to their physical circumstances and to each other, as individuals or in groups. Obviously any such master-science as might seek to bring together the harvest of these special studies, and show us Man or any group of men, in all their implications, must be of slow growth. For it can only advance upon so broad a front, if all the necessary avenues are clear and traversable.

It is perhaps also necessary to note, before going further, that to search for uniformities is futile, if the things or processes which are being compared are not really of the same kind. They may be very nearly alike, and may appear to proceed similarly so long as we are only able to record them with approximate accuracy, or during a short period of time. But, however minute their differences, it is only a matter of more precise observation, or of an interval sufficient to allow errors to accumulate, for a discrepancy to appear between calculated and observed occurrences. Sooner or later, aberrations of the planet Neptune betray the presence of a remoter and almost invisible planet: those of Mercury, a still more unexpected quality of space itself. Discrepancies between samples of nitrogen or oxygen demonstrate in the one case admixture of another inert gas, and eventually of a whole group of such gases: in the other the co-existence of isotopic varieties. In biology, similarly, neither in natural species, nor in domesticated varieties, are all individuals "thoroughbred" in the full sense of the word. Their offspring differ, if not in the points to which the breeder or the systematist has paid most attention, nevertheless in subtle peculiarities of temperament, endurance, or immunity from disease. But, as has been rather grimly observed, Anthropology is the only branch of science wherein the individuals whose qualities we are trying to compare, analyse, and generalize from, are themselves so infinitely diverse that every one of them bears a proper name. It is not simply a hierarchy of genera and species that we are studying; not even the John Doe and Richard Roe of the law books, but literally Tom, Dick, and Harry, in all their incorrigible originality. Each of us, you and I, is what the books of logic call an *infima species*; though we may not make much allowance for this in our dealings with others, very few of us fail to insist on it, now and then, in other people's dealings with ourselves. Such variability in the material itself complicates still further the problems, already intricate enough, of all those sciences which deal with what we describe as secondary and tertiary qualities.

We need not therefore be surprised if we find that the advance of knowledge about *what really happens* in the daily behaviour of humanity is slow and haphazard

Even when we concentrate attention on the larger subdivisions, we are dealing at lowest with a highly specialized animal species, of almost world-wide distribution, exceptionally tolerant of variations of climate, differences of food, peculiarities of environment and resources. Though it is differentiated into well-marked races – so strongly characterized that it has been more than once disputed whether they are not separate species—there has been frequent and widespread interbreeding, especially among those varieties which are most accessible to research, and most overwhelmingly dominant in their most strictly human activities. We have only to look at the Babylonians, the Greeks, the Japanese, the French, or our mongrel selves, to realize what humanity owes to the mixed as well as the comparatively thoroughbred peoples, such as the Egyptians or the Hebrews. Moreover, though closely linked with one another in their capacity for common-sense reasoning, these so-called "races" and "breeds" are quite as uniformly liable to those perversions and inhibitions of common sense which we call "panic" and "pride," the failure to look facts in the face and think out a course of action, on the one hand under overmastering fear, on the other in premature confidence that past thinking has done all that is required to meet the present emergency.[1] Not that the course of political, and even of moral philosophy, ran on untroubled by anthropological discoveries during the seventeenth and eighteenth centuries. From Caliban and the Hottentot Cooree, to "Man Friday" and Locke's "Indian in the backwoods of America"; from Montesquieu's "Huron" and "Iroquois" to Rousseau's "Carib on the banks of the Orinoco"; from "Wild Peter" to Captain Cook's "Boy Omai," each successive phase of discovery has its echo in the philosophies of the day. But this contact was marginal and occasional for the most part: political, moral and economic studies pursued their own course without aid or interference from what nowadays we should call anthropologists.[2]

Further, it was an unfortunate accident that the real services to mankind, both of the Mediæval Church and the Greek traditions of philosophy which it had incorporated in its system of education, led to an easier compromise between the traditional and the reformed humanities, than could be imagined between dogma and experiment in the interpretation of nature. Even to the scholars of the Renaissance, the literary gifts of those two fairy-godmothers, Greek and Hebrew, who stood around the cradle of the Nation-state, were sufficient both to satisfy rational curiosity as to the nature and functions of man, and to guide statesmen and teachers in the formation and employment of citizens. Consequently the reformed humanities, while they won their way, within a century, to recognized pre-eminence, as the substance of a

[1] *See* my papers in Marvin, "The Unity of Civilization" (1914), and "Science and Civilization" (1923).

[2] For the relations between Anthropology and Political Science see my address in *Proc. Brit. Ass.*, 1909 (Winnipeg), and the reprint in *Publications of the Department of History of the University of California*, iv (1915), pp. 1–81.

liberal education for subjects and rulers alike, won this status at the cost of conformity to methods of research and interpretation which had much in common with mediæval practice, and fell all too easily into the same snares of literalism and pedantry as had been the ruin of mediæval learning.

So it came about that the vast stores of experience of the way men actually behave, in the widely differing circumstances disclosed by the great explorers, from the discovery of America and South Africa onwards, were neglected, until contact with European manners and arts of life, and still more an enforced conformity with European morals and religious beliefs, had disfigured or destroyed aboriginal behaviour beyond hope of adequate record. Even the graphic details reported, for example, in the Jesuit *Relations* from early mission-posts, lay unregarded in the Propaganda archives: and it is only from occasional allusions in a few writers on the Human Understanding or on the Nature of Law, that we have even a glimpse of what was being daily seen in Outland by the men who were corrupting and destroying it

Probably this was inevitable. Explorers and administrators of new continents in the sixteenth and seventeenth centuries, no less than the missionaries whose achievements they made possible, were the pioneers of a new age and a new outlook on the world. They had a mission—to "buy all good things for the price of work" —and to remove obstacles to that traffic; like the sages of Bacon's *Atlantis*, they were "merchants of light"—the light that they had—and for such men, as for the Hebrews, the "dark places of the earth" were "full of darkness and cruel habitations." Even explorers into the ancient east, as we trace them in the pages of Herodotus, shared this inevitable egotism. You will remember the marginal note of our Elizabethan translator:—*observe y^e beastly devices of y^e heathen.*[1]

There was another reason, besides this inevitable deficiency and corruption of the materials, why anthropological science matured slowly, and is still in doubt about some of its most important glimpses of truth. Until quite recently, and in some quarters even now, traditional views about the origin and constitution of Man—inherited partly from Babylonia through Hebrew literature, partly through Christian literature and ecclesiastical folk-memory, from the ancient Greeks—had become so deeply embedded in the structure of a theological system, and involved with the practical application of this system to morals and politics, that scientific reasoning had to proceed warily, in the face of as bitter controversy as beset astronomy or anatomy at the Revival of Learning. A good deal of energy was thus expended in what soldiers call "covering operations," and withdrawn from the main objectives. Worst of all, relations between the anthropologists and the classical humanists were put on a false footing, through the preoccupation of the classical teachers with educational troubles largely of their own making.

[1] Quoted by Andrew Lang in *Anthropology and the Classics* (ed. Marett), Oxford, 1908, p. 44.

Further, from the circumstance that the older and more academic studies which have preoccupied so much of the anthropological field were interested in the behaviour and achievements of people akin to ourselves, and in periods of their history for which there was literary record. Anthropology, gleaning in unreaped corners of that field, found itself concentrating its attention on the more remote and less civilized peoples, and on aspects of the present age which illustrate rather the infancy and adolescence than the maturity of mankind. This, however, was an accident equally unfortunate for the anthropologist, who only touched fortuitously the phases and aspects of humanity which are more fully rationalized and self-conscious, and for the psychologist, philologist and sociologist, whose inexperience of primitive (and indeed of almost all non-European) doings made him slow to appreciate the significance of these rudiments for the more complicated and sophisticated occurrences with which he had usually to deal. The result was that anthropological teaching failed to reach the largest group of students obviously destined to appreciate it, namely, the humanists; that it failed also to reach the men most likely to have either practical use for it, or opportunities for fresh observations, namely, the missionaries and administrators: and consequently, that it remained restricted to a very small number of persons, either amateurs with private resources, or teachers of biology or geology, who happen during their own course of study to realize the value of its standpoint.

Thus restricted in its personnel, as well as in its material, Anthropology has been obliged to move slowly, and has from time to time fallen behind the sciences most closely akin to it, in its methods and dominant conceptions.

On the physical side, though it had kept pace with the great anatomists and systematists of the eighteenth century, it was held longer at a dead-end than other kinds of zoology, by reason of the special reluctance of many persons to accept evolutionary theories as applicable to Man: and it was also involved inevitably in a practical problem, economic and political, namely, the justifiability of slavery, from which it was only released by the settlement of that question in practice through the American Civil War.[1]

Another drawback was, for a while, the false lead given by the slightly older study of comparative philology, which had been pursued for half a century as if similarities of language presumed community of blood as well as of culture; by the rash generalizations of comparative religion: and by other generalizations made by Sir Henry Maine and many students of institutions, as to the antiquity and distribution of patriarchal society among the peoples of Europe, the Near East, and Northern India.

It was indeed no accident, but a direct result of improved access to fresh sources of knowledge about mankind, that philological and ethnological enquiries came into being so nearly at the same time, and also that the comparative study of religion began as an offshoot, not of general ethnology, but of the study of a particular group

[1] *See also* p. 35 below.

of languages. It was also no accident that what was for a while called "comparative psychology" came to the aid of the older "mental philosophy" with methods borrowed from the physiological laboratories of western universities, not from field experience of non-European races.

Thus, when this Cinderella among the sciences began, rather late, to be conscious of its own existence and of a specific programme, it found large parts of that field of knowledge—the study of mankind in general—which theoretically belonged to it, already preoccupied by more special and more departmental studies, already fairly well established.

These parallel lines of attack on special aspects of the human problem left to the new sciences of anthropology and ethnology two main departments comparatively unexplored, while the fringes and fragments of the other sciences just mentioned were roughly drawn together to make a third. In this rather casual way arose the more special significance of *Anthropology* as the comparative study of zoological breeds or races of man, their structural peculiarities, and dissimilarities (rather than uniformities) of function, their geographical distribution, and the geological circumstances of their origin: while, side by side with this physical or anatomical Anthropology concerned with the characters and activities of an individual specimen of humanity, there grew up a sister-science, *Ethnology*, dealing with the behaviour of men as members of groups, and with the common characters resulting from the "mutual improvement"—to use a familiar, if rather old-fashioned, phrase—of each individual by intercourse with the rest. This ethnological study of mankind, again, inevitably falls into two sections, according as we are dealing with what men merely *do* with their behaviour, customs, institutions, which leave no material record, as when a song or dance is over, or a change of belief or sentiment affects a social revolution; or (on the other hand) with what men *make*—their implements, ornaments, architecture, and all that Aristotle called their "external goods," which perish not wholly in the using, but may, with luck, long survive their makers and the societies which they constituted. This comparative study of man's handiwork—his arts and crafts—is technology, of which the "past tense," so to speak, and historical evolutionary aspect, is archæology. The study of customs and institutions, meanwhile has no conventional name: the proper word for it—*Biology*—has been misappropriated by the students of manifestations of life not specifically human. It may be described as *Social Anthropology*, or as Ethnology, in a restricted sense of that word, and an important aspect of it, as will be obvious by this time, covers much the same ground as what its French exponents and their English imitators have denominated *Sociology* or "Social Studies."

Finally, I come to a drawback which we have had occasion to notice already, in earlier phases of the subject, but which has loomed up again in modern times, and is becoming one of our most serious preoccupations to-day. For more than a generation, from the publication of Tylor's *Researches into the Early History of*

Mankind in 1865, to the Cambridge Expedition to Torres Strait in 1898, the practical (and mainly financial) difficulties of field-work resulted in what has been described as "a very dangerous division of labour between the self-made anthropologists in the field—travellers, traders, missionaries, administrators—who were acquiring fragmentary details of savage life, and the literary anthropologists working them into theories at home. Work of very great interest and value was being done, but the fact remains that it was not scientific in any strict sense, because the class of evidence supplied by untrained collectors did not constitute the right material for scientific induction." (B. Pierre Marreco, *The New Age*, N.S. vii, 1 (Suppl. 5, May, 1910), p. 7.

It was the distinction of Dr. Haddon and his colleagues in the Cambridge Expedition to Torres Strait to remedy that state of things. They were all fully trained men, drawn from other fields of work—Rivers, C. S. Myers, MacDougall, and Seligman from psychology and medicine, Ray from philology, Haddon himself from zoology; and they applied their special equipment to anthropological problems, "collecting and treating the raw material—the facts of human behaviour—with as much conscientious thoroughness as biological or chemical research is known to demand." They owed much already, and still more as they came to work up their results, to the French sociologists, to Hubert and Mauss, to Durckheim, to Le Play and the writers of the *Année Sociologique*, and to the new school of regional geography both in France and at home which was defining as the immediate object of its study "the ethnic group in its regional setting." All the best work since the Cambridge Expedition has been on the same lines; more intensive study of particular peoples in their natural surroundings; less of the analytical and comparative study of the customs and traditions of widely different regions; more careful classification of cultures with regard to their distributions and affinities with each other; and, it should be added, less confident enunciation of general conclusions, in proportion as the complexity of the material became better understood. To see where we stand now, compare Sir James Frazer's introduction to Dr. Malinowski's *Argonauts of the Western Pacific* with Frazer's own preface to the first edition of the *Golden Bough*, published in 1890.

It is only fair to insist, in view of some recent criticisms, that from the first systematic handling of the matter, in the middle of the nineteenth century, this regional and distributional standpoint has been normal among British anthropologists. In Tylor's *Primitive Culture*, published in 1871, the leading thought is, of course, evolutionary, as we should expect at that time. We read, for example, that "On the one hand, the uniformity which so largely pervades civilization may be ascribed in great measure to the uniform action of uniform causes: while on the other hand its various grades may be regarded as stages of development or evolutions, each the outcome of previous history, and about to do its proper part in shaping the history of the future." But at the same time there is ample recognition of the

influence of surroundings, and of the consequent anomalies and unconformities in the geographical distribution of anthropological facts. To quote again from the same book: "To the ethnographer, the bow and arrow is a species, the habit of flattening children's skulls is a species, the practice of reckoning by tens is a species: the geographical distribution of these things, and their transmission from region to region, have to be studied as the naturalist studies the geography of his botanical and zoological species."

It is in the evolution of the material arts that this analogy between anthropological and biological data is most obvious—for here we have in archæological evidence the same perspective backward in time, and the same sort of changes of distribution from one period to another, as we are afforded in biology by geological evidence. But there is also documentary evidence in plenty for the historical development of customs and institutions, though they leave no material relics. Consequently the proof appears to be complete that an evolutionary explanation is as applicable to human achievements as to the plants and animals: and that one of the main factors in such evolutionary changes is independent of tradition, and even of volition,—namely, the outer world, in all its geographical and regional variety.

These are some of the reasons why the scientific study of human behaviour, even in the least complex kinds of human societies, has lagged so far behind other branches of biological and—must we add—some branches of humanistic study also

Applications of Anthropology to Current Practices and Theories.

We have next to face the question, in what directions is it possible—and has it been practicable—to apply anthropological methods or conclusions, either to practical questions, or to supplement other methods of studying human behaviour? And we are confronted at the outset with a profound difference between the mode of approach of the practical man and the scientific researcher, which it is of the first importance to realize, if we are to understand the limits and the conditions of applied science of any kind, and if we are to make clear to the practical man, as we have unfortunately so often to do, the limits and the conditions under which all scientific work necessarily goes on.

The "practical man," like the researcher, is dealing with problems to which knowledge alone can supply solutions. He wants knowledge, and if he is truly "practical" and thorough in the practice of his business, he wants all the knowledge which is relevant to the case. But he has to deal with events as they come: with opportunities which are momentary, and do not recur. At such moments, involving instant decision, he has no time to make researches, or to arrange for experiments. He has to use what knowledge he has already; and, if he calls in an expert, he wants his opinion now. Armed with such knowledge as there is—with only that fragment of existing knowledge which is within his momentary reach—he has to make his decision, irrevocably. He may have the luck to mend—later on and with

fuller but belated knowledge—some of the consequences of a false step: but that is luck, not business.

Contrast with this the outlook and procedure of the "researcher." Potentially he is, like Aristotle's Deity, "spectator of all time and all existence." Not that he sees it all, as yet, but it is a matter of indifference to him—in so far as he is simply and solely seeking after truth—whether what he finds is of practical utility or not. Standing as he does in the trenches, on territory hardly won, at the border-line between knowledge and the unknown, he too takes his opportunities as they come, winning a foot of ground here, and a foot there, or losing, it may be, whole yards of precarious occupancy, in the collapse of some scheme which did not really hold together. For lack of other knowledge—lacking perhaps in some department far out of his own way—he may be "stalled" for years: by the converging advance of colleagues, to right and left, he may be carried forward unawares over positions he could never have won by frontal attack. But his work, however fragmentary, is systematic: he "does his bit" in a campaign which follows a plan—that plan among events themselves, which reason eventually formulates irrefutably; which seems so obvious and convincing, when we look back across conquered provinces, now reconditioned, organized, and fertile in practical resources. But it is seldom that the chances of discovery come at a practical turning-point. Given foresight, and time to look ahead, practical ability and scientific insight working together may have the luck to go far; in the old saying, that "necessity is the mother of invention," is a large measure of truth. But it is commoner that the practical moment passes, and discovery comes later, to be put away, "for use another time." The normal repository of discoveries, as of Noah's Dove, is in a pigeon-hole.

But it is just this inevitable lack of connexion between the growth-point of systematic knowledge, and the chance exigencies of everyday life, that justifies the claim of science upon the practical man, to be given an adequate start in the race. *Forewarned* is *forearmed*, as we know: but it is not so generally realized that, in all matters of applied knowledge, *forearmed* is *forewarned*: when the new problem looms up before the practical man there is no time to make experiments, or to send out expeditions, in the hope of collecting the facts, or verifying current notions of what happens. A chemical manufacturer, no doubt, maintains his research laboratory primarily to deal with immediate problems of this practical kind, as thoroughly as time permits. It is not, however, always from these researches or from practical improvements suggested by them that the greatest return on his expenditure comes: but from independent investigations, suggested (it may be) by some earlier question of the kind already mentioned, but elaborated in spare time, and leading into new ground, unforeseen and unconnected with the current practice of a business.

In the same way, more generally, the broad outlines of all systematic sciences are established by systematic work, now in the laboratory, now in the library, now

again in the workshop or the open field, quite independent of the chance incidents of a consulting practice, or even the routine of a class-room.

There is another contrast between pure and applied science, which it is especially needful to keep in mind, when the applications of the science are so closely concerned with human well-being, as we find them to be in anthropology.

Pure science (it hardly needs to be repeated) is concerned wholly with the discovery of *truth*, with establishing, beyond question, what actually happens throughout its special field. With the utilization of this knowledge it is not in any way concerned. That a poised magnet tends to lie in a particular position in regard to a coiled wire through which an electric current passes, is a physical fact which can be verified at will; nothing can alter it, but also there is no obligation on anybody ever to repeat the experiment, except for educational ends, which, however, are practical, not scientific ends. If it is of any importance to anybody that any poised object should be caused to change its pose, here is a way in which this can be accomplished; and the force with which it can be made to move depends on the strength of the current we choose to employ. The question, why anyone should ever wish to make use of such a device, and for what purpose, is a totally different one: and different again is this other question—how much time, or trouble, or expense we think it worth while to employ in constructing, adjusting, or improving it. These are all questions, not of pure, but of applied science, and they are concerned not with the ascertainment of "what actually happens," but with the realization of something which perhaps never has happened, and might never happen but for our desire and resolve.

In the historical and distributional sciences it is the same, and even more obviously so. This indeed is a popular criticism of them. In the pure science of geology we are concerned to establish what, for example, is the distribution of gold or any other constituent of the earth's crust, and how and when it came to be so distributed. The other questions, whether it is worth while to go and look for gold in this or that place, whether, knowing it to be there, it is worth while to win it; and, having won it, for what purpose to employ it;—belong not to geology as a pure science, but to the applied sciences of the prospector, engineer, and financier. Similarly, the biological determination of the modes in which the characteristics of a breed are hereditarily transmitted is a question of pure zoology or botany, and quite independent of the problem, what kind of beans or horses we wish to breed, and for what purposes. And so, too, in the study of mankind, there are pure sciences of anatomy, racial anthropology, psychology, economics, and so forth, and there are applications of them to problems of daily life as remote from those of the pure sciences themselves as the practical questions of cattle-breeding are from questions of Mendelian inheritance.

In every science, however, the method of ascertaining what actually happens is exactly the same, whether the question at issue is a practical one or purely

theoretical: and carelessness or dishonesty leads as surely to confusion and failure in the one kind of problem as in the other. A curious anthropological instance occurred in the first days of Italian political unity, when conscription was introduced throughout the new nation-state, and conscripts were accepted or rejected according to a system based on Prussian experience, at that time the fine flower of military art. But an unexpected percentage of healthy young Italians were rejected in some, yet not in all, parts of the country: and as nothing was amiss with the lads, it was clear that there must be something wrong with the standard. Accordingly Rudolfo Livi undertook his famous investigation—from the conscript registers themselves—of the limits and regional distribution of Italian statures, the first national survey of physical characters. He demonstrated the wide range of stature and other anatomical features between the north and south of the recently united state—which no one had suspected before—and enabled the Italian War Office to adjust the German-made standards, with which it naturally started, to the real limits of military efficiency among a smaller-built people than the Prussians. In this Italian example it was a mere misadventure due to excusable ignorance.

Sometimes, on the other hand, it would seem as if the wish had been father to the thought, as in the political importance attached by the founders of Bismarckian Germany to the hair-and-eye colours of the school children examined by Rudolf Virchow. Here the military authorities refused to allow the colour-census to be made from the conscripts, and the political authorities made use of the larger percentage of blondness which was recorded among the children—many of whom darken perceptibly as they grow up—to claim a degree of homogeneity between German-speaking people in the north and in the south, which every traveller in Bavaria knows to be exaggerated, but which has been of profound political importance in reconciling quite different types of people to membership of a state in which Prussian influence was to be dominant.

Another striking example of the recovery of ground lost through a false assumption, by acting on sounder principles when at last they were ascertained, is the history of the Northern Territory of Queensland. This has been so recently discussed by Professor J. W. Gregory[1] that the points need only to be summarized here. From 1850 to 1900 it was generally believed that it was impossible for white men to settle permanently within the Tropics, and there seemed therefore no reason why sub-tropical Asiatics should not be allowed, and even encouraged, to settle there. Experience of the results of this policy, and especially of the difficulty of preventing Asiatics once admitted from passing on from the tropical outlands into the cities, enforced reconsideration of the whole question. Meanwhile, the founders of tropical medicine had demonstrated that it was not the climate but the diseases of tropical

[1] *Proc. Brit. Ass.* 1924 (Toronto) pp. 125–47, esp. pp. 143 *ff.*

regions which were the obstacle, and that, though the climate could not be altered, diseases might be avoided, if not eliminated, from the cultivable regions. The experiment was therefore made of conducting a thoroughly tropical enterprise, the cultivation of sugar, by white labour only, and with complete success. The only indispensable precautions were strict medical control of the sources of disease, and strict economic control of the standard of living, by excluding all persons whose standards are lower than those of the whites.

I have dealt rather more fully with these last examples because they illustrate a risk to which all applied science is exposed, namely, that of applying to practical ends the knowledge available at the particular moment when the need for its utilization has become urgent. It was a chapter of technological accidents which had far-reaching consequences: *first*, that the Greek discovery of the steam-engine occurred in a phase of culture which had neither fuel enough to drive an engine that was more than a laboratory toy, nor boiler-plate to withstand the pressure necessary for industrial purposes: and *second*, that the modern industrial movement took place in a geographical region where the weather was so violent and fickle that any device based upon the windmill was discredited in advance, but where, on the other hand, the climate was so inclement that the natural place, where a brainy youth would loaf, was by the hearth with its bobbing kettle-lid: with the result that we endured a wasteful century, and more, of reciprocating-engines before the genius of Sir Charles Parsons recalled us to the point reached long before by Hero of Alexandria, and gave us not only the steam-turbine, but a new series of water-turbines as well. To take another instance from applied physics, all attempts to correct the defects of the mariner's compass, by increasing the length and weight of the needle, failed because they were based upon imperfect acquaintance with the mechanical factors in the problem. It was William Thompson's determination to "learn all about the compass," as he himself put it, before attempting to improve it, which led him back to the fundamental problem, and gave him a solution which was the converse of those which it superseded.

The Progress of Anthropology towards recognition as Applied Science.

If I now introduce a brief retrospect of the stages by which British anthropology has been accorded some measure of recognition as an *applicable*, if not yet a very much *applied* science, with an episode like those already described—where an ill-founded theory led to misguided and eventually dangerous practice—it is mainly to show that anthropologists themselves are conscious of the shortcomings, as well as the merits, of their science: and also of the grave responsibility which lies upon any study which claims to have practical as well as speculative bearings.

Organized anthropology begins in England with the foundation of the Ethnological Society of London in 1843. "On the continent of Europe," as I have

attempted to explain elsewhere,[1] " the zoological controversy as to the multiplicity or unity of mankind, coincided almost exactly in time with the new philological movement," wherein the gross fallacy —*quot linguæ, tot gentes*—of the equivalence of speech and breed reinforced that sentiment of nationality in public affairs which still dominates European politics, and (in this special question) worked wholly in favour of the polygenists. In England, on the other hand, polygenist views could hardly get a hearing. In America, vast material interests popularized—indeed, almost enforced —Lamarckian special pleading of the question, " how far a race may have been, or may become, modified by the combined action of time and moral and physical causes," and, consequently " what position in the social scale Providence has assigned to each type of man."[2] In other words, hit your brother-man hard enough, and often enough, and irresponsibly enough, under a tropical sky—the " combined action of time and moral and physical causes " and a negro results: but remember that " while Almighty Power on the one hand is not responsible to man for the distinct origin of human races, these on the other are accountable to Him for the manner in which their delegated power is used towards each other " - in other words, hit a negro hard enough and often enough, but with a due sense of responsibility, and under transatlantic conditions, and you may, God helping you, get him white again.

The Foundation of the Anthropological Institute, 1871.

Though polygenist views were not popular—the English press about 1840 was described as " unanimously unitary "—we have the admission of Prichard, the leading representative of unitary views, that polygenist opinions were held in some scientific quarters, though not openly expressed for reasons of prudence[3], and later, James Hunt and other members of the Ethnological Society of London, became so frankly polygenist, that they seceded during the American crisis, and founded the Anthropological Society in 1863.[4] But, meanwhile, the general recognition of Boucher de Perthes' discoveries in 1858 had gained the necessary allowance of time for differentiation of black, white and yellow from the issue of a single progenitor: Darwin's *Origin of Species* in 1859 had given reasons both for the mode and for the fact of such differentiation: and when the issue of the American Civil War had numbered the " delegated power " of white over black among the lost causes of applied anthropology, the lion lay down with the lamb

[1] Myres, *Univ. California Publ. in History*, iv (1916), p. 72.

[2] J. C. Nott and G. R. Gliddon, *Types of Mankind*, Philadelphia (8th ed.), 1857, pp. 49–50.

[3] J. C. Prichard, *Natural History of Man*, London, 1848, p. 6.

[4] Details are given in Sir Arthur Keith's *Presidential Address*, 1917 (*J.R.A.I.*, xlvii, pp. 19–22). That Hunt's views on the Negro Question led directly to the secession I learned from the late Sir Edward Tylor who was a member of both Societies.

in 4, Saint Martin's Place, and the Ethnological and Anthropological Societies became merged in the Anthropological Institute of Great Britain and Ireland [1]

It has been, I think, partly the result of this composite origin that our Institute has continued to hold so level a balance between the physical and the cultural aspects of our science, to the great material benefit of us all. The only subsequent foundations covering at all the same ground[2] have either been, like the Folklore Society of 1878, expressions of a predilection for the literary, antiquarian, and home-regional aspects of certain branches of it, or like the African Society of 1901, or the Japan Society, concerned with more intensive study of a particular region, people, or culture.

Indeed, in one instance, the process has been reversed. The establishment, quite recently, of an Indian Section within the Anthropological Institute has not only not detracted from the efficiency or prosperity of the Royal Asiatic Society, but has brought the Institute into direct touch with Indian colleagues, and has made what we believe is permanent provision for the maintenance of one of the most valuable of Orientalist publications, the *Indian Antiquary*, so long maintained almost single-handed by our distinguished Fellow, Sir Richard Temple.

Organized Research, and Concerted Interpretations.

The next step forward was taken, once again, in response to a political situation. After long tentative exploration, Africa was rather suddenly "opened up" to European exploitation: and as there was not in "darkest Africa" itself any potential claimant to an African empire—no Incas, no Great Khan, no Middle Kingdom, not even a Confederacy of Five Nations—the result was a "scramble for Africa," which in some respects recalled the scramble for North America in the eighteenth century. Similarly in Asia, there was virtual partition, between France and Great Britain, of all that lay south of China and east of India. East of this region, and far into the Pacific, industrial expansion in Europe, and agricultural development in Australia, created new demands for man-power as well as for raw materials. Obviously, new regions of contact with local and special cultures were at the same time new fields of observation, and presented new problems of government, new aspects of what came to be called the "White Man's Burden," and this at a time when industrial conditions at home were making people "think hard" about economic and social rather than about political institutions. While Lord Salisbury was admitting cynically that "we are all socialists nowadays," writers so different in antecedents and outlook as Post and Maitland, Ratzel and

[1] The Paris Société d'Anthropologie had been founded in 1859, whereas the Société Ethnologique de Paris (1839) had been almost exactly coeval with the Aborigines Protection Society of 1838, from which the Ethnological Society of London had been itself a secession (Keith, *J.R.A.I.*, xlvii, p. 13). Topinard (*Anthropology*. London, E.T., 1890, p. 16) refers loosely to an earlier "Ethnological" Society "of an exclusively philanthropic character.

[2] The short-lived London Anthropological Society (1873–6) was little more than phantasm of the old "anthropological" faction (Keith, *l.c.*, p. 23, note).

Westermarck, Robertson Smith and Frazer—above all, Huxley in his *Romanes Lecture* of 1892—were alike popularizing the notion that "we are all sociologists now." In 1898 Dr. Haddon could write of this phase of anthropological study: "Sociology is the study of human communities, both simple and complex, and an attempt is now being made to trace the rise of single communities and their gradual and diverse evolution to the complex civilizations of ancient and modern times. . . . The physical conditions of a country . . . affect the life of the human inhabitants of that country: in other words, the mode of life of a primitive people is conditioned by its environment. . . . According to this method of investigation, we start from physical geography and find ourselves drawn into statecraft and political economy."[1] Here evolutionary biological notions derived through Tylor and Pitt-Rivers from Lubbock and Darwin are combined with an economic and sociological outlook which came partly from Buckle, partly from Le Play, partly from German geographers, and especially from Ratzel.[2]

It was also now first vividly and generally recognized among anthropologists themselves that the "clash of cultures" was spreading so rapidly, and causing such devastation among recessive modes of life, that there was serious risk that irreplaceable evidence would disappear before it was recorded. This conviction was greatly reinforced by the realization in this country, due largely to the ideas of Mannhardt and Wilcken, that even what passed for "folklore" and "superstition" had value, and also that much of this material might provisionally at least be concatenated with the help of a few leading notions, such as are the chapter-headings of the first *Golden Bough* (1891), of Gomme's *Ethnology in Folklore* (1892), and of Hartland's *Legend of Perseus* (1894). The foundation of the Folklore Society in 1878—it has, as we remember, celebrated its jubilee last September—marks an early stage in this kind of work, so far as it concerns our own country. In 1892 the British Association appointed a committee to conduct an "Ethnographical Survey" of the United Kingdom: it included representatives of the Society of Antiquaries of London, the Folklore Society, the Dialect Society, and the Anthropological Institute: and in 1893 the Royal Irish Academy began its series of reports on the somewhat ambitious programme of an Ethnographic Survey of Ireland.[3]

Almost simultaneously, Herbert H. Risley submitted to the Anthropological Institute his memorable paper, "The Study of Ethnology in India," firstfruits of personal investigations and a genius for sympathetic and far-sighted administration, which found full scope in the great *Census of India* of 1901, and are best illustrated in its *Ethnographic Appendices*, separately published by Risley himself in 1903.

[1] A. C. Haddon, *The Study of Man*, London, 1898, pp. xvii–xviii.

[2] F. Ratzel, *Anthropogeographie*, I. 1891; II. 1899. His earlier *Völkerkunde* (1885–8) was popularized in England under the title *The Races of Man* (3 vols., London, 1896–8), superseding such pioneer works as Rev. J. G. Wood's *Natural History of Man* (1868) and *Man and his Handiwork* (1886). A. H. Keane's *Ethnology* (Cambridge, 1896) was another sign of the times.

[3] Haddon, *The Study of Man*, 1897, pp. 435–7.

This was, of course, not the first systematic attempt on the part of a civilized government to take stock of the backward or alien cultures under its care. In the United States, the genius and enthusiasm of J. W. Powell, encouraged by the sympathetic foresight of Clarence King, had founded the Bureau of Ethnology in 1879 to take over and extend ethnological researches already undertaken as a labour of love by officers of the United States Geological Survey: a precedent followed in Canada thirty years later, when the Geological Survey took over the work of the Committee on the North-West Tribes of Canada, which had been originated by the British Association at its Montreal meeting in 1884, and was reorganized as an Ethnological Survey Committee at the Toronto meeting of 1897.

Still earlier, and more continuously active, was the Dutch Government's ethnographical work in its East Indian possessions, supplemented by the researches of unofficial travellers and by the collections and reports of the Ethnographical Museum at Leyden. To this period also belongs the fine pioneer work of Codrington (for example) in Melanesia, Sir William Macgregor in New Guinea, Sir Everard im Thurn in British Guiana, Dr. Charles Hose in Borneo, and the first journeys of Spencer and Gillen in Australia. The deliberate employment of trained ethnologists by Sir Reginald Wingate in re-organizing Egyptian Sudan falls a few years later, but Wingate had seen service under Kitchener, and Kitchener had trained himself in Palestine and Cyprus to understand the native mind intimately, before he ever had command of native levies. These, and especially the work of Risley, Crooke, Rose, and their colleagues, official and voluntary, in Indian ethnography, were the precedents which encouraged the proposals for an Imperial Bureau of Ethnology. Mention should also be made, in this connection, of two other points: the much earlier establishment of an Archæological Survey for India, with wide scope and modest funds, for the conservation of monuments; and of the project for an Imperial Institute, primarily to commemorate the Diamond Jubilee of 1897, but presumably to be of some further use afterwards; though on this point opinion was—and is—more varied and less precise.

Proposals for an Imperial Bureau of Ethnology.

At the Liverpool meeting of the British Association in 1896 a resolution was adopted:—

> "That it is of urgent importance to press upon the Government the necessity of establishing a Bureau of Ethnology for Greater Britain, which, by collecting information with regard to the native races within and on the borders of the Empire, will prove of immense value to science and to the Government itself."[1]

[1] *Proc. Brit. Ass.*, 1896 (Liverpool). The resolution originated in the Anthropological Section (President, Arthur J. Evans, Recorder, J. L. Myres; Secretaries, H. Balfour and A. C. Haddon), and was proposed by C. H. Read. For the long and intimate co-operation between the British Association and successive London societies for the study of man, see Keith, *l.c.*, pp. 20–1, 24.

The recommendation was referred to a committee, including Sir John Evans, Sir John Lubbock, Professor Tylor, and Mr. (afterwards Sir Hercules) Read, of the British Museum, which reported in the following sense. Various societies have collected and published ethnological material, but it is unequal and unsatisfactory. Explorers have usually travelled for other purposes than that in which these societies are interested; they are untrained and unsystematic in their work. Whole regions devoid of big game, or of minerals, were unrepresented in anthropological records. If it be admitted that the study of the human race is an important branch of science, no further argument is needed to commend the gathering of the required facts; and if this work is worth doing, it must be done without delay. With the exception perhaps of the negro, none of the lower races are capable of living side by side with whites. The usual result of such contact is demoralization, physical decline, and diminution of numbers. Only while these peoples exist is it possible to preserve their traditions and record their habits of life. Such direct evidence is necessarily more valuable than accounts filtered through the recollection even of the most intelligent white man. It is necessary to urge that no time be lost. (If over twenty irreplaceable years have since been lost by Imperial authorities, it is at all events not for want of plain warning from anthropologists of the dangers of procrastination.) As to the benefit to the Government from these enquiries, the history of our relations with native tribes in India and the Colonies is rich in examples. In dealing with natives of Africa, thorough study of their character, beliefs and superstitions is an admitted necessity. Even in dealing with the highly civilized natives of India, familiarity with their religious and racial prejudices is essential.

The only training given (at that date) by officers, traders and missionaries was acquired on the spot. They learnt to deal with natives by experience, sometimes dearly bought. Dutch officials, on the other hand, had a regular course of instruction as to the life, laws, religion, etc., of the inhabitants of the Dutch Indies; and there was a Dutch official handbook for the use of civilians also.

A Bureau of Ethnology (it was argued) would not be expensive, if only the scheme were explicitly recognized and encouraged by Government. The opinion was widespread that high administrative influences discouraged the expenditure of time or energy on observations or enquiries of this kind; and it was urgent that this misapprehension should be dispelled. Kipling's "Dravidian Pig" in fact had a human counterpart. If the Colonial Office, Foreign Office, Admiralty, and the Intelligence Branch of the War Office would issue instructions to their officers, "not only that they were at liberty to conduct these enquiries, but that credit would be given to them officially for good work in this direction," many observers, qualified by experience, would at once put themselves and their leisure at the disposal of the Bureau.

The Bureau itself should be in London, annexed to (and under) some existing Government agency. The Colonial Office obviously had some advantages, but the

Committee preferred the British Museum. A Director and two or three clerks would probably suffice at first: but the scientific, as well as the practical, value of the results might justify increase of staff after a few years. As to publication, the Committee reserved its opinion, the scope of an Imperial Bureau being obviously much wider even than that of the U.S. Bureau of Ethnology, which publishes its reports, but is limited to American topics. It was proposed to approach the Government by deputation in conjunction with the Anthropological Institute.[1]

To this proposal the Trustees gave a general approval[2] with a view "both to the objects in view of the Association and to the enlargement of the British Museum collections." Rearrangements already in progress within the Museum would shortly permit of carrying this into effect. Nothing happened for the moment, but in reply to further representations from the British Association in 1898 a room was found which might serve as an office for making a start with the scheme, "but while the Trustees have accepted in principle the proposal, . . . the desired end could scarcely be obtained without the influential co-operation of the British Association."[3] The shuttlecock was flying well.

The President of the British Association (Sir Michael Foster) accordingly appealed to the Prime Minister (Lord Salisbury) to remove any misapprehension that might exist as to the propriety of the collection of ethnographical information by officials favourably placed for such enquiries: and the Foreign Office issued instructions to H.M. Commissioners in Uganda, and East and Central African Protectorates, to H.M. Consul-General in the Somali Coast Protectorate, and to H.M. Acting Agent at Zanzibar, and H.M. Consul at Brunei. It was explained to the Foreign Office that the Bureau staff would frame the questions, and that the commissioners, consuls, and so forth would only have to answer them, at their own convenience apparently, and also at their own expense: for there was no provision for anything but a little clerical assistance at headquarters.[4]

The workings of official minds are a special department both of anthropology and of social science. It was, of course, useless, in face of American experience, to say that a Bureau of Ethnology was impracticable: useless in face of current preparations for a Census of India in 1901 to say that Great Britain had no one to organize it: useless to pretend that the British Museum's collections were adequate, when they were notoriously outclassed already, even in respect of certain British Possessions, by Leyden and Berlin: useless to plead that Government servants had no time for ethnological work, in face of the contributions of Dutch officials to anthropology, and of the fine unofficial services of men like Risley, Crooke, Hose, im Thurn Ellis, Kirk, and Temple. The alternative was to accept the project in

[1] *Proc. Brit. Ass.*, 1897 (Toronto), pp. lxxxiv–vi.
[2] *Proc. Brit. Ass.*, 1898 (Bristol), pp. lxxxiv–v.
[3] *Proc. Brit. Ass.*, 1899 (Dover), pp. lxxiv–v.
[4] *Proc. Brit. Ass.*, *l.c.*, pp. lxxxix–xc.

principle and starve it in practice. The revenues, personnel and accommodation of the British Museum remained as before, and were not seriously strained by the few reports which came for a while through official channels.

The South African Situation in 1900.

A conspicuous opportunity for applying anthropological experience to a vast practical question, and at the same time for extending anthropological knowledge in a direction which everyone now sees to have been urgently imperative, came with the South African War. In the event of victory, the British Government would obviously have to review, and probably would have to revise, the treatment hitherto accorded to natives in the Transvaal and Orange River territories, as well as the general terms of intercourse and co-operation between Europeans and natives throughout British South Africa. Accordingly, in agreement with the Folklore Society, the Anthropological Institute presented in the summer of 1900 a detailed memorial to H.M. Secretary of State for the Colonies, Mr. Joseph Chamberlain,[1] of which the principal points were these. The native population of the districts in question, estimated at nearly 1,000,000 persons, "does not tend to die out in consequence of contact with Europeans: on the contrary, the natives are prolific, and hence are likely to remain a permanent element of the population." These natives are "in a somewhat advanced social state, having a tribal organization, religious institutions, and a morality of their own." But "contact with civilization tends to break up their organization, to destroy their customs, and to set them free from many of the old moral restraints, without imposing new ones, and generally to render them difficult of management by a European Government." This tendency "is greatly accelerated where, as too frequently happens, the Government does not take special pains to ascertain the customs and institutions of the natives, and to make regulations for them, carefully considered in the light of such information."

"Many of the difficulties between Europeans and natives arise not from wilful disregard, but simply from ignorance . . . and it is notorious that disastrous results . . . have often followed. Something is already known on the subject from the reports of missionaries and travellers, but the knowledge is fragmentary and wanting in accuracy." Empirical acquaintance of officials with native custom, "not being recorded, has to be picked up in piecemeal fashion by everyone who is appointed to administrative office, and cannot be studied systematically: is liable to be lost, and introduces an element of uncertainty in the administration of justice and various departments of government." As long ago as 1880, the Government of Cape Colony appointed a commission of enquiry into the customs and institutions

[1] *Man*, 1903, 37. The President of the Folklore Society was the late Mr. Sidney Hartland; of the Anthropological Institute, Dr. A. C. Haddon.

of the native population, which had made a most valuable report in 1883, and a "compendium of laws and customs" had been compiled by Colonel Maclean, C.B., for British Kaffraria as early as 1858. But tribal customs vary from tribe to tribe: a "compendium of Kaffir laws and customs" may be misleading to magistrates and administrators in the Transvaal: half-knowledge applied by the half-expert is a public danger.

Accordingly the two Societies begged that "as soon as the condition of the Transvaal and Orange River Colony permits, and *prior to any legislation affecting the natives*," a commission might be appointed "to enquire (*a*) into the customs and institutions of the natives of those states, and (*b*) into the relations between the natives and the European settlers": and asked that, in addition to local experts, there might be included "at least one person, unconnected with South Africa, of recognized eminence in the study of savage customs and superstitions in general."

But Mr. Chamberlain was too busy. He did not agree that the present time was a suitable one for such an appointment: the officials of the new Colonies were also, in his opinion too busy with "the numerous questions of pressing practical importance," which evidently did not include native affairs. Even two years later, when the two Societies repeated their petition, and desired the Colonial Secretary to receive a deputation, they found him still too busy. "But," he added, "if you decide to carry out such an enquiry under the auspices of your societies, he will be glad to give you any introductions that may help to further your object." The notion of adding even one expert in native affairs to the overworked existing staff does not appear to have occurred to him. There was a tragi-comic sequel. The Government which had refused to investigate the customs and institutions of South African natives was upset by popular clamour about the treatment of imported Chinese.

Organization of Anthropological Teaching.

There was, however, some excuse for official apathy. Even at the close of the nineteenth century, no British University included any branch of anthropology among its degree courses. Tylor had been brought to Oxford by Jowett in 1883 as Reader in Anthropology, and Dr. Haddon at Cambridge became University Lecturer in Ethnology in 1900: but no other University had any anthropological teacher, though racial anthropology was studied and often encouraged in departments of human anatomy. Tylor's scheme for a degree course in anthropology at Oxford was rejected in 1895 by an unusual combination of opponents, representing theology, classical studies, and the natural sciences—"Scribes, Pharisees, and Sadducees," as was profanely observed at the time. The theologians, satisfied that they knew "the truth" about human nature, resented the claim of "false gods" to serious study; the "Museum" regarded the study of man as an inexact science; *Literæ Humaniores* suspected a rival in *Literæ Humanissimæ*. The good, as usual,

and especially the "unco' guid," were the enemies of the best. Anthropology became, and remains, a "special subject," which can only be offered in addition to the full degree course in some recognized Natural Science. It need hardly be added that, from that day to this, no one has ever offered it. Under the "Research Degree" Statute of 1899, however, it became possible to submit an anthropological thesis for the degree of B.Litt. or B.Sc., and one of the earliest candidatures was in an anthropological subject. The process of discovering which was the proper "Board of Faculty" to admit, supervise, or examine an anthropologist, was diverting, but too lengthy for record here.

But the recent successful establishment of Diploma-courses in Geography (1900), and in Economics (1904), suggested an alternative: and the Oxford Diploma in Anthropology was established in 1905, under a Committee containing representatives of Classical Studies, Modern History, Oriental Languages, and Biological Science, as well as the Professors of Comparative and Human Anatomy, Mental Philosophy and Comparative Psychology, and the Keeper of the Ashmolean Museum. As a candidate of sufficient merit could obtain "distinction" in this Diploma-examination, and as the Diploma itself was soon afterwards accepted as equivalent to two out of the three subjects required for the "ordinary" B.A. degree, it thus became possible for a student to follow a degree course the greater part of which was in anthropological studies, and in which a recognized approximation to "Honours" was attainable. Cambridge followed with a Diploma-by-Thesis in 1908[1]: London admitted Anthropology to the Pass degrees of B.A. and B.Sc. and to Honours B.Sc. in 1912, and to Honours B.A. in 1922: and when a British Association Committee reported on the teaching of Anthropology in Great Britain in 1923, no less than eleven Universities provided instruction in one or more principal departments of the subject.[2]

Consequently, it is no longer possible to excuse public neglect of anthropological studies on the ground that they are unscientific, or unorganized, or unrepresented among the courses of University study.

Anthropology as Qualification for Public Service.

The direct result of this recognition of Anthropology as a subject of University teaching was a corresponding change in its relation to other subjects of study for candidates for appointments in the public service. In 1918, a Treasury Committee revised the list of subjects which might be offered by candidates for admission to the Higher Civil Service, in accordance with the general principle that only subjects of regular University courses were to be fully recognized. For the moment this operated as unfavourably to Anthropology as it did, for example, to Geography.

[1] At Cambridge a Diploma-by-Examination followed in 1914: an Anthropological Tripos (Part II) in 1913, and a Tripos (Part I *or* Part II, but not both) in 1928.

[2] *Proc. Brit. Ass.*, 1923 (Liverpool), pp. 416 *ff.*

but in the revised examination of 1921 both "physical" and "social" anthropology were recognized, each with a maximum of 100 marks, like astronomy and elementary chemistry. By a curious refinement, "physical" anthropology was held to include prehistoric archæology and technology, but not a "practical" examination. As an examination-subject, "social anthropology" has attracted a considerable number of candidates, chiefly natives of India. To judge from published mark-sheets, however, the proportion of seriously qualified students has not been large. The "physical" combination has been offered by very few.

Opportunities for Anthropological Study for Officials.

Of greater value both to the advancement of learning and to the conduct of administration than the provision of degree-courses or their equivalent, or of mark-sheets, are the facilities offered by those Universities which have schools or departments of anthropology, to men who have already experience of colonial administration and native affairs, and are prepared to devote part of their furlough to systematic study of anthropology, or who, being already selected for such services on other qualifications, are required to combine anthropological study with other probationary subjects.

The diploma-courses already mentioned have always attracted both these classes of students, and have been recognized as alternatives to those official courses of study which are provided for probationers, for the most part in certain London institutions. This enables an anthropological candidate to continue his work under familiar teachers, and permits greater freedom of choice in regard to special aspects of the subject.

The Diverse Origins of Schools of Anthropology.

The last point needs elaboration, because it illustrates the conditions and processes which go to the creation of a new subject of study, and indeed of any new branch of organized knowledge. The diversity of origin among schools of anthropology is notable and instructive, even in Britain: it is even better illustrated if foreign schools also are taken into account.

Commonest is the creation of interest within a department of human anatomy, first in racial differences and characters, then on those external conditions, climate, food-supply, and so forth, which are found to be associated geographically with this or that human breed: then, on the reasons for this association: then, on those characters and qualities other than physical—technique, organization, customs, beliefs and ideas, which emerge during the process of accommodation. Here physical anthropology has a start which it seldom forfeits, and social anthropology gradually makes its own contacts outside the department, and eventually outside the Faculty of Medicine or Natural Science altogether.

Sometimes the starting-point is in zoology, man ranking as a kind of animal whose habits and exceptional range of distribution distinguish him from other Primates, even more than his physical build; whose habitations may be regarded as elaborated nests or lairs, and whose social arrangements, as Aristotle already saw, far exceed in complexity those of other gregarious species. The same stress on distribution and adaptation to surroundings characterizes those anthropological schools which, as at Leipzig and in the University of Wales, have originated among geographers: or from the results of voyages of exploration.

Quite a different situation results when anthropological interest has originated in archæological, or in the archæological department of a school of classical or Oriental studies. Archæology—as has been said—is technology in the past tense; it raises the question, "who were the makers" of this kind of implement or that, and "what sort of lives did they lead?" From comparisons, that is, between present-day cultures which, among much else, include arts concerned with durable materials—stone, metal, pottery, for example—and ancient cultures from which only such kinds of objects are preserved, arises the necessity for ethnographical enquiries, and archæology expands into general ethnology.

Rarer are the occasions when anthropology has found its first encouragement in the comparative study of Law, or Economics; though here the special instance of the London School of Economics, with its two Martin White Chairs, is familiar, and appreciated by us all. Really exceptional but characteristic of its place of origin is the history of anthropology at the University of Brussels, within the Faculty of Theology; the scientific observational study of the Nature of Man on this earth, being the necessary counterpart of the study of the Nature of God; and both being preliminary disciplines for the student of Christology, of a Nature that is partaking both in the Human and the Divine. Harvard also, and the Boston Institute of Technology began their anthropological teaching with courses of comparative religion for theologians.

This diversity of origins has its analogies in the development of academic geography, sometimes from the geological, sometimes from the historical end; but as the contacts of anthropology with other sciences are more numerous, so its roots ramify more widely. And as a result it must be admitted that in few subjects are there greater diversities in outlook, in sources of information, in method of approach to fresh problems, than among students of anthropology: a feature distressing to examiners, and perhaps disturbing to candidates, but common to all new and growing interests, and thoroughly wholesome and encouraging.

Local Schools of Anthropology and Regional Researches.

A very important consequence of this variety of outlook, and special qualification, among the students from different schools, has been the variety of enterprises to which they have set their hand. Cambridge, after long years, has still the materials

of its Torres Strait Expedition, not yet fully available; the Pacific collections of von Hügel, and in another direction the prestige of Robertson Smith and Frazer. Oxford has the vast heritage of the Pitt-Rivers Collection and its accessions, with the special addiction to technology, which they were designed to inspire; and, side by side with that an interest in the comparative study of institutions which goes back beyond Tylor to Maine and Bryce and links new studies with old. Bristol, similarly, has its Spelæological Society. Liverpool has its special collections from West Africa, its Archæological Institute mainly concerned with the Nearer East, and personal links with China, and formerly with Honduras. Wales has its own stores of unexplored material, and its special problems. These are only examples: no two institutions are alike in their appeal or their practice.

From this apparent digression into the history of our present academic provision for anthropological teaching we may return to the progress of arrangements for research and for the application of the results of research to practical problems. The digression was deliberate, however, because the achievements, and consequently the claims, of anthropology to-day cannot be justly appreciated unless regard be paid to the changed position of the subject in the Universities, and consequently to the prospect of a supply of trained men, which was effected between 1905 and 1920.

Further Proposals for an Imperial Bureau of Ethnology, 1908.

This was indeed recognized quite early in the period under review. In August, 1908, a deputation from the Universities of Oxford and Cambridge was received at the India Office on behalf of Lord Morley, and at the Colonial Office by Lord Crewe. One of the Cambridge representatives, Professor Ridgeway, was also President of the Anthropological Institute. Its object was "to urge the imperative necessity of giving some training in religions and ethnology to the probationers for the Indian and Colonial Services." About the same time the Anthropological Institute sent a memorial on the same subject—very influentially signed by Indian and Colonial administrators (among whom were Lord Curzon and Lord Stanmore), and by leading shipowners, manufacturers, bankers and merchants—to the Prime Minister and principal heads of Government departments,[1] and in March, 1909, the Prime Minister received a deputation, of which Professor Ridgeway was the spokesman, asking for a Government grant of £500 a year to enable the Anthropological Institute to establish an Imperial Bureau of Ethnology; for as was truly insisted, the Institute, "with its splendid library, collections of photographs, *Journal* and *Man*, and its correspondents in almost every country in the world, has everything that is wanted

[1] The memorial and signatures are printed in full in this *Journal*, xxxviii, p. 489. See also Professor Ridgeway's Presidential Address to the Anthropological Section of the British Association (*Proc. Brit. Ass.*, 1908 (Dublin), pp. 842–7), and his letter to the *Spectator*, May 7th, 1910, when the subject was revived (April 23rd) by an experienced administrator, Sir J. Bampfylde Fuller.

for such a Bureau except a little money." A Government grant was not made: but the Prime Minister "was entirely with the deputation in their proposition that anthropology had become, and was becoming, more and more every year, not only an important, but an indispensable, branch of knowledge, not merely for scholars, but for persons who in an Empire like ours were going to undertake—whether in the Consular Service, in India, or in the Crown Colonies—the work of administration."[1]

It was in the same year 1908 that Sir Reginald Wingate, organizing a Civil Service for the Soudan, invited both Oxford and Cambridge to provide just such training as was being advocated, for probationers, in addition to their other subjects of study. This recognition of the practical value of anthropological study for administrators deserves commemoration as a notable step forward: it has been amply justified by its results, and extended to probationers in the service of Crown Colonies and other dependencies: and after twenty years not a few of those early probationers have distinguished themselves both by their wise conduct of native affairs and by their eminent contributions to learning. No less valuable have been those courses of instruction and facilities for advanced study which have been provided at all our schools of anthropology for officials on furlough after foreign service, some of whom, through their field experience, have been able to impart, in information and stimulus, fully as much as they have received.

Proposal for an Imperial School of Applied Anthropology.

Another promising movement for the recognition of anthropological study and training as of public utility was initiated by our Fellow, Sir Richard Temple, on the occasion of the British Association's visit to Birmingham in 1914, when he presided over its Anthropological Section. His main contention was reinforced by the recommendation of the Royal Commission on University Education in London, about the same time, that "it is almost as important that officials and others intending to spend their lives in the East, or in parts of the Empire inhabited by non-European races, should have a knowledge of their racial characteristics as that they should be acquainted with their speech, and we believe that the Colonial Office shares this view." The British Association and the Royal Anthropological Institute accordingly took steps to secure the co-operation of those Universities which were by this time teaching Anthropology, or some part of it. There was an influential conference in January, 1914, under the presidency of Lord Selborne, and the Prime Minister, Mr. Asquith, was asked once more to receive a deputation on the subject. The subject was further discussed at the British Association's Australian meeting in 1914, where it was resolved to organize the systematic teaching of Anthropology to persons about to proceed to, or actually working in, those parts of the British

[1] *The Times*, March 12th, 1909, verbatim report of the whole interview. *Man*, 1909, 55.

Empire which contain populations alien to the British people, by the collaboration of the Royal Anthropological Institute, the British Association, and the Universities, with the support and co-operation of the Government, the Foreign Office, the India Office, the Colonial Office, and the Civil Service Commissioners; to encourage the existing schools of Anthropology at the Universities and the formation of such schools where none exist; and to insist that laboratories, library and museum are indispensable adjuncts to every school of Anthropology.

But the outbreak of war diverted attention from Pacific to European barbarism, and postponed the acceptance of Sir Richard Temple's watchword, for the dealings of one race or people with another, *tout pardonner, tout gagner.*[1]

After the War: Co-ordination and Co-operation.

In Anthropology, as in everything else, things looked very different to those who came back from the War. Some had not come back; there were sad gaps to fill. Others, who had looked forward to careers of research or teaching, were drawn off urgently into administration, with whatever training and experience they might have; and especially into one branch or another of "reconstruction." All were hampered by the general exhaustion, the change of economic values, the pressing call of professions and businesses. And meanwhile people were waking up. The grosser sorts of imperialism were discredited, but empires remained—indeed, the surviving empires had grown. The less progressive regimes, on the other hand, either had broken up or were crumbling; but the so-called "backward races" were pushing forward with disconcerting brusqueness, in the half-light of their own ideas, or ideas which they supposed to be ours. At home, war-time expedients and mutual forbearance were setting new standards for peace-time behaviour, if it can be called a standard of behaviour to do as each thinks best, or to do without thinking at all. But beneath and beyond all that, there was tacit agreement that what had happened must not happen again: that it had happened not for want of will, but for want of thought; and that the remedy was in the application of thought and common sense to affairs, of scientific method and results to administration, as well as to production and exchange: and most of all to international and inter-racial affairs.

Hence, on one hand, a long series of Royal Commissions and special enquiries, more systematic, more searching and more fruitful, as the results of each presented

[1] For the details of Sir Richard Temple's proposal, see *Man*, 1914, 35; 1921, 4; and his *Anthropology as a Practical Science*, 1914, containing addresses to Cambridge students in 1904, to Indian Civil Service probationers at Oxford in 1914, and his Birmingham address to the British Association. By a quite undesigned coincidence it was at a Birmingham meeting of the British Association in 1839 that Dr. J. C. Prichard read the paper on *The Extinction of Native Races*, which first called public attention to that problem, and contributed directly to the formation of the Ethnological Society.

fresh points for enquiry; and therewith opportunities for those, in the public services as well as in political life, who have the ability to master the new evidence and appreciate the bearings of it, to realize the extent to which the war aggravated rather than created the world's vast arrears of thought-taking.

On the other hand, among scientific people, the need has become clearer for economy of forces, distribution of tasks, and insistence on "appropriate action," as it used to be called in war-time, in accordance with agreed plans.

At the British Association's meeting at Edinburgh in 1921, Sir Richard Temple's project of 1914 was revived for discussion. But it was now clear that, in addition to numerous local schools of Anthropology—and, indeed, in proportion as these became more numerous and diverse in their interests and procedure—some means both of correlation and of co-operation was required. Accordingly, resolutions were submitted by the Anthropological Section to the General Committee and referred to the Council:—

(i) That it is in the interests of the Empire that a knowledge of Anthropology should be more widely disseminated.

(ii) That for this purpose Universities and other institutions be encouraged to provide instruction in this subject.

(iii) That there should be a central institution in London, not necessarily new, for the collection, co-ordination and publication of the results of anthropological research, and the provision of information derived therefrom, for the use of the Imperial Services, teachers, missionaries, and others.

A Conference was accordingly convened, to which all Universities and other Institutions engaged in any form of anthropological research or teaching were invited to send representatives, and the substance of the recommendation was discussed freely and repeatedly, the decisions of each session being referred to each represented body for ratification. Unanimously the Conference resolved that the proper body to act as the central clearing-house for matters of common concern in anthropological research and teaching was the Royal Anthropological Institute, with such assistance as each and all of the bodies represented at the Conference might be able to supply. This invitation was communicated through the British Association to the Institute, and accepted.

The next step was to give effect to it. The Council of the Institute accordingly appointed, as the statutes empowered it to do, a Joint Committee for Anthropological Research and Teaching, consisting of the Officers of the Institute, representatives of the Fellows nominated by the Council, and one representative from each University or other Institution in Great Britain engaged in anthropological research or teaching. This Committee is convened (as occasion requires) for the discussion of matters of common concern. It has ascertained, and keeps itself informed, as to the teaching and other facilities provided in anthropological subjects by each constituent body, and

as to the projects of research which each body has in hand or contemplates.[1] Any matter on which information, opinions and advice are required may be referred by the Council either to the representatives of the constituent bodies (who take what steps they please to return a suitable reply), or may be raised by any of the constituent bodies through its representative. In case of difference of opinion or policy, the Joint Committee is summoned to discuss it: if there is substantial consensus of opinion, this is reported to the Council of the Institute for appropriate action, and also to the constituent bodies in so far as concerted action on their part is desired. This simple and hitherto effective procedure enables the Royal Anthropological Institute to express, not in its own name only, but as accredited mouthpiece of all British anthropologists, a considered opinion on current matters of anthropological concern—the co-ordination of anthropometric measurements, the arrangements for international congresses in anthropological studies, the promotion of an Anthropological Endowment Fund—to take only the record of the year 1928: besides periodical interchange of information about research and teaching, as already described.

The Endowment of Anthropological Research.

The establishment of the Joint Committee on Research and Teaching, and its inconspicuous but efficient services, make it possible at last to take that other step forward, which is submitted for the approval of the Royal Anthropological Institute in its Council's Report. Throughout the long story which I have attempted to summarize, the continual embarrassment resulting from lack of funds has been evident. Since the Cambridge Expedition to Torres Strait thirty years ago (p. 29) there has been no British expedition on so large a scale for that simultaneous study of all aspects of a regional culture which necessarily throws so much side-light on the special work of each member of the party. This dearth of large expeditions is not peculiar to anthropology. In zoology the voyage of H.M.S. *Challenger* between 1872 and 1876 has had no successor, and the attempt to provide one after the war failed.

This is not the place to talk politics, or even finance. But anthropologists are concerned with human nature, and it is safe to observe that it is not humanly possible to maintain scientific research out of private benefactions when private affluence is restricted by the conversion of most other sorts of charity from private benevolence into public levies. All that the benevolent taxpayer can do, till better times come, is to make use of the concessions already made to organized benevolence; to keep unremitting guard against encroachments: and to insist on the application to scientific aspects of government, at all events of public brains, if it be true that public funds are not available. In all other forms of "practical" life, amateurs repeatedly convicted of incompetence tend, at long last, to employ professional assistance on

[1] A report on the provision for anthropological teaching and research in the Universities of Great Britain and Ireland is printed in *Proc. Brit. Ass.*, 1923 (Liverpool), pp. 416 *ff.*

professional terms: especially if it is from their critics' purses, not their own salaries, that they are to supplement their shortcomings.

In the meanwhile, we have to make the best of a difficult situation. And there is reason to be grateful. For emergencies and special researches it is comparatively easy to raise modest endowment by special appeals: the Institute's Fayum Expedition in 1928 is a recent instance. The Rivers Memorial Fund, in the management of which the Institute has an important share, is another valuable contribution.

General Maintenance.

For the general maintenance of the Institute itself, it is much more difficult to raise funds, otherwise than by increase in the number of Fellows, and in this I do not feel that we are as successful as we ought to be. To give more to our Fellows themselves for what they subscribe is financially impossible, in spite of the most careful management. But is it primarily for what they get out of the Institute that election to Fellowship is sought? Recent investigation of the Institute's liability to income-tax has emphasized, what we all know, that the Institute exists to advance the Study of Man, without any qualification whatever. It is a great object, a privilege and a responsibility, the "proper study of mankind." It has been said that a gentleman is one "who puts more into life than he gets out of it": and it is surely the essence of Fellowship to bring to the common object—whatever it may be—which bands men together, free-will contribution according to the ability of each. That, in relation to the greatest of societies, is citizenship, in a civilized State; and in the special associations for specific ends, like this Institute, it is the only Fellowship worthy of the name. A scientific society is not running a club any more than it is dispensing a dole. It is a Fellowship of colleagues to assist others as well as themselves to leave the world wiser and therefore also better than they found it.

The Rockefeller Benefaction.

That the Institute's work has this essential quality of Fellowship, of charity in its older and more comprehensive sense, to include the removal or surmounting of any kind of obstacle to general welfare, has been publicly and most graciously recognized in the very generous help which has been accorded during the past few years by the Trustees of the Laura Spelman Rockefeller Fund. This contribution, as the Council's Report shows, has been devoted to two main objects, the improvement of the Library and of the *Journal*, on the efficiency of which the value of the Institute chiefly rests, both to Fellows and to students of anthropology generally. For there are certainly many whose opportunities for active Fellowship are limited in other respects, but who can at all events give their time and their thought to our science. We have also, in common with all national societies, the plain duty of hospitality and assistance to visiting brethren from other countries, who have similar institutions to support over there.

The Present Joint Appeal for a Research Endowment Fund.

But it has been understood from the first that these Trustees—like Heaven in the proverb—are helping the Institute to help itself. Their donation has been invaluable; their testimony to the Institute's importance and public utility more precious still; especially following, as it did, on the domestic recognition of the Institute as *servus servorum* of all kindred societies here, to which attention has been directed already (p. 49).

It is in this capacity that the Institute projects its imminent appeal for a Research Endowment Fund, to enable anthropologists, wherever trained in this country, and wherever engaged in research or teaching, to go out into field-work properly equipped and reinforced by efficient provision at home for working up their results. There is no doubt at all about the supply of anthropological workers, or about their quality or training, once there is provision for their maintenance and for the necessary cost of their work.

Epilogue.

In addressing an audience whose reason for being here is that it consists of citizens intent upon the advancement of knowledge, and the enrichment of life as a whole, I need not explain, in detail, that as anthropologists we are concerned neither with the utility of anyone's theories about human nature, nor with the justice of anyone's version of the "rights of man." So far, indeed, as we are concerned with ideas at all, we are here, as anthropologists, to deal with them objectively: to describe them, and discuss them, with the same aloofness from them, and from the people who believe them or make use of them, as we should observe in describing and discussing those same people's dress or language. We are concerned, in fact, not with the truth, or the goodness, of these ideas, but with their origin, and with the circumstances of their growth, not with the *Why* but with the *How*.

We leave it for the philosopher and the economist to decide whether this or that idea, or ideal, is, or will be, *worth anything* either in theory or in practice, and content ourselves with the humble and (to my mind) safer attempt to discover, by comparison of instances, whether it ever *was*; to note the kind of way in which such ideas and practices come to be current; and to what groupings of circumstance they have each been appropriate.

Reasonably understood, the past may give guidance to the present, and throw a little light into the future. But note the limitation: the historian of human achievement, like a man rowing in a boat, sits with his face to the stern: if the course be straight, or if he knows it well enough, he can steer by landmarks seen far behind him. What he cannot do is to avoid collisions with other craft propelled like his own; with the bank, at a turn in the river; with shoals and snags below the surface. For that, you must look ahead and around; and divine also, by seamanship and "road-sense," what the other fellow is trying to do; and that is where learning and experience give way to genius, which is the scientific use of imagination.

SCULPTURED FRAGMENTS FROM PALENQUE.

(An account of the first Old Empire Maya remains to reach Europe.)

[With Plates I–IV.]

By S. K. Lothrop.

To-day intensive field studies conducted by American and British institutions are rapidly adding to our knowledge of the Maya Indians of Middle America, a people in centuries past the possessors of an exceedingly complex and flourishing civilization. The excavations now in progress, however, are not the fruit of sudden interest in the Maya, but are based on investigations which have been undertaken during the last century and a-half. It is the purpose of the present paper to record and to revaluate some of the earliest studies in the light of present-day knowledge.

The first descriptions to reach Europe of the great stone cities of the Maya were written during the sixteenth century by the various conquerors and by travellers engaged on governmental or ecclesiastical journeys. Of the first, we may cite accounts of Maya cities seen in eastern Yucatan by such men as Alonso Davila, Bernal Diaz del Castillo, Juan Diaz, etc. Secondly, we have more detailed and elaborate descriptions of Maya cities written by Garcia de Palacio, Diego de Landa, and the anonymous chronicler of Alonso Ponce's arduous journey. Although none of these early reports of Maya cities found their way into print for centuries, yet their existence was known to scholars and historians, as is clearly demonstrated by the letter of Muñoz concerning Copan and Palenque, cited in the appended bibliography.

While early accounts of Maya cities have considerable interest for the student to-day, the real foundations of serious study of the Maya civilization were not laid until the second half of the eighteenth century. At that time the intellectual leaders of Europe were dedicated to much speculation in a philosophic vein on the social and economic organization of mankind, and in line with such studies there arose a popular interest in people of other ages and lands. Into this current of inquisitiveness the ancient remains of the Maya were by chance injected, and the problems presented by them have since been under investigation.

The ancient Maya ruins to-day known as Palenque might well have been the first Old Empire city to be visited by Europeans, for Cortés must have passed close by during his long over-land journey to Honduras in 1524. However, the aboriginal

remains near the once flourishing trading-post, but now somnolent village, of Palenque escaped notice until the latter half of the eighteenth century. For information on the discovery and first exploration students are indebted to Brasseur de Bourbourg, who collected and partly published various manuscript accounts of the site. From these it appears that the first European visitors were Antonio de Sols, parish priest of Tumbala, and his young nephews, who inspected the ruins in 1746. Palenque might again have been forgotten had not one of the boys related his tale of adventure to a cousin, Ramon Ordoñez y Aguiar. Many years then passed, but Ordoñez did not forget the strange story he had heard, and finally, in 1773, he sent out the first Mayan archæological expedition under the leadership of his brother.

Eleven years then passed, and in 1784 a copy of the report prepared by the Ordoñez y Aguiar brothers was presented to the colonial authorities in Guatemala City. There it attracted the attention of the President of the Royal Audience, who ordered one José Calderon, lieutenant of the Alcalde Mayor of Palenque, to make additional investigations. On receiving further details, still greater interest was aroused in Guatemala, and thereupon the Royal Architect, an Italian named Antonio Bernasconi, was dispatched with Calderón to the ancient city. Returning in June of 1785, Bernasconi presented a series of drawings and plans, and these, together with his manuscript report, were forwarded to the Marquis of Sonora, the Colonial Minister of Spain.

Several copies of the Bernasconi report exist to-day. There is one in the Royal Academy of History in Madrid, another in the Museo Nacional in Mexico City, and a third preserved in the British Museum. In the Peabody Museum of Harvard University there is a photographic copy of the British Museum manuscript and coloured copies of the drawings, also a hand-written copy accompanied by tracings of the Madrid manuscript. As Bernasconi's drawings are presumably the first ever made at Palenque or any Old Empire Maya city, it seems worth while to list them :—

(1) Map of the Palenque region. This apparently is lacking in the Madrid manuscript.

(2) Elevation, section, and plan of the Temple of the Inscriptions ("Casa no. 1") and of the Temple of the Sun ("Casa no. 2").

(3) Decorative details from the Palace as follows : (*a*) 3 stucco medallions : (*b*) 4 stucco bas-reliefs : (*c*) an oval relief surmounting an altar ; (*d*) a text of 6 glyphs, evidently a crude drawing of our Pl. II, *c*, beside which is written : "Este adorno o sea armas esté en el patio adornado todos los frisos de molduras i algunas cuartos ; i tambien en la casa no. 1 esta el Gavinete adornado. Nota que el adorno no esta arreglado a la medida de este pitipie : tiene de largo media vara, i de ancho una tercia i una pulgada. Antonio de Bernasconi."

(4) Elevation, section, and plan of the northern half of the Palace, showing in detail the now fallen north-eastern corner. A north-south section through the eastern court shows a series of subterranean rooms under both sides of the court. The northern chambers are not shown on any other map and are unknown to modern investigators.

In Spain, Bernasconi's report aroused great interest, and the Royal Historian, Juan Bautista Muñoz, was requested to write a commentary on it. As a result the Crown demanded further particulars from the Guatemalan authorities. As Bernasconi had died in the meantime, they dispatched Capt. Antonio del Rio to Palenque in the year 1787. Del Rio did a good piece of work, considering his lack of training, for he wrote a careful description of the ruins, mapped the Palace in part, he made a series of drawings, excavated several temple floors and discovered foundation offerings, and he got together a small collection of stone and stucco carvings. This collection (Pls. I–IV) was sent to Spain in the frigate *Ntra. Sra. de los Dolores*, also called *La Bastanesa*. A copy of Del Rio's manuscript (of which several were made) was brought to London from Guatemala after the Independence: Henry Berthoud translated and published it in 1822.

An interesting point brought out by Bernasconi and Del Rio is that most doors and windows at Palenque were blocked up with stones when the city was discovered, and that they were opened by Del Rio. This looks like a military measure, and a siege may have terminated the native occupation of Palenque. While doors in Maya cities at times were sealed when structural weakness became manifest, I am aware of no other city where a general blocking-up of entrances occurred.

In the early nineteenth century Palenque was again investigated by royal order (1805–8). The explorers were Capt. Dupaix, an Austrian officer, who was accompanied by a draughtsman named Luciano Castañeda. Their report was published in part by Humboldt and Kingsborough, and finally was completely published in 1831 and 1834.[1] The original Castañeda drawings, now in the British Museum, must be based in part on those of Del Rio, for they show *in situ* sculptural details removed by Del Rio a quarter of a century before Castañeda reached Palenque. For instance, the stucco head illustrated in our Pl. IV, *a*, marked by a curious strap across the cheek, is depicted in its original position by Castañeda. Unfortunately neither Del Rio nor Castañeda did justice to their subjects, so that it is through the illustrations of later investigators—Stephens and Catherwood, Waldeck, Charnay, Maudslay, Holmes, Seler, Blom, etc.—that the artistic importance of the remains at Palenque has become widely known.

[1] The common edition is that of 1834. I have a fragmentary edition, differing from that of 1834 only in that it is dated 1831. Numerous delays occurred in putting this work through the press, and possibly a few advance copies were run off in 1831.

The sculptures presented in the accompanying illustrations were, as we have said, taken from Palenque in 1787 and sent to Spain, where they were placed in the Gabinete de Historia Natural, later to be transferred to the Museo Arqueológico Nacional. In 1880 they were brought to light by De Rosny, who, in a limited edition of 100 copies, published 5 of the 14 specimens here illustrated. These specimens may be classified as 3 stone tablets, a stucco head, and 10 fragments of stucco relief-sculpture. Of the latter, 6 are glyph-blocks from inscriptions.

The largest stone tablet (Pl. I, *a*) has been called the "Madrid stela." It displays a man seated on a low throne with one leg drawn up under his body. Details of his dress are none too clear, but the chief garment evidently is a skirt or apron held in place by a belt. His torso is bare, but he is adorned with a necklace, heavy wristlets, and ear-rings—presumably of jade. The hair is elaborately dressed and is held in place by a curiously knotted fillet. On the chin is a small scarified or tattooed device. To the right of this figure appears a flower motive identified as a water-plant, which more commonly is shown with fish nibbling at the flowers and accompanied by some attribute of death. Maudslay[1] has illustrated a group of water-plant motives, while additional information and further examples have recently been published by the present writer.[2] The left side of the "Madrid stela," shown in Pl. II, *b*, contains a band of glyphs. Most unfortunately the block has been cut down, in order to reduce its bulk, in such a manner that the inscription has been mutilated and its nature remains in doubt. A Hotun glyph, a uinal, and a head of the North Star god may be seen, however, which suggest an astronomical calculation.

Originally this sculpture seems to have been the right-hand pier of a small altar in House E of the Palace. Set in the wall above it was the oval plaque shown in Pl. I, *b*. Stephens described the remains of such an altar and published a diagrammatic drawing of it. Del Rio (p. 13) writes: "Below the elliptical stone above described, there is a plain rectangular block, more than 2 yards long by 1 yard and 4 inches broad and 7 inches thick, placed upon four feet to form a table with a bas-relief in the attitude of supporting it. Fig. 16 represents one of these feet, and No. 6 is the original which I dispatch, in order that the bas-relief may be more easily understood. . . ." While the "Fig. 16" of Del Rio was not published, one of his unnumbered and variously ordered illustrations shows the oval plaque still in House E and beneath it the altar. From this crude drawing the "Madrid stela" can be identified as the right leg of the altar.

Palenque art is difficult to arrange in a chronological sequence, because there are few dates which can be associated directly with sculptural and architectural remains. With considerable confidence, however, we may divide Palenque sculpture into two main periods; the first exhibits stone carving in low relief, the second is distinguished

[1] Vol. iv, Pl. XCIII.

[2] In *Indian Notes*, vol. iii, No. 3.

by the use of stucco in somewhat higher relief. The periods represented by the use of these two materials doubtless overlap.

The famous carved tablets from the Temples of the Cross, the Foliated Cross, the Sun, and the Inscriptions are the culmination of stone carving at Palenque. On them occur numerous dates of astronomical importance extending into the past as far as 3379 B.C.[1] Also they all contain a number of dates falling between 9.10.0.0.0 and 9.13.0.0.0 (373–425 A.D.), which students accept as approximately contemporaneous, because the later dates fall on such even numbers as 10.0.0.0.0 (A.D. 570) or 20.0.0.0.0 (A.D. 4512). At first glance it would seem that the dates of the buildings housing these tablets could thus be roughly determined, but the architectural style of the various buildings indicates that they were erected long after the carving of the tablets, as we know from other Maya cities where obviously contemporaneous dates are found carved on the lintels. Hence we are forced to believe that most, if not all, of the carved tablets at Palenque had been moved to their present positions from earlier edifices.

Maudslay's House E, in which the "Madrid stela" stood, probably is the oldest edifice on the upper level of the Palace. Blom (p. 171) significantly notes the presence of heavy walls, narrow doors, and the absence of the roof-comb found on the other upper level buildings. We may add that the central position on the foundation mound and the stairway connecting directly with the lower range of rooms also point to an early date. Are we then justified in believing that the altar of which the "Madrid stela" formed part and the carved plaque set in the wall above are contemporaneous with the house in which they stood? The simplicity of the hair-dressings and the stiffness of the pose of both the House E carvings seem to indicate an earlier date than that of the larger and more elaborate tablets from various Palenque temples, dated between 9.10.0.0.0 and 9.13.0.0.0, but House E, we may say with confidence, could not have been erected as early as this, and so we conclude that the stone carvings in it had been brought there from an older building, possibly from a walled-up room in the base of the Palace. We may add that on the interior walls of House E are elaborate stucco reliefs, obviously of later date than the stone plaques, and these stucco reliefs apparently are integral with the architect's plan for the building.

Two other slabs sent to Spain by Del Rio are illustrated in Pl. II, *a* and *c*. Of *c* he writes (p. 15) that it was discovered on the left side of the first step descending to the lower range of rooms at the south end of the Palace. Both carvings, however, must have come from this passage, for Bernasconi states that there were "unas Bovedas subterraneas que paresce sirvieron de calabozos por no tener luces, en cuya escaleria á la entrada havia dos piedras grabadas, delas cuales es la que arriba cito dibujada en el Plano nº 3º." Each piece exhibits 6 glyphs carved in low

[1] According to the Morley-Spinden correlation.

relief. The text is of an astronomical nature, recalling passages found in the Temple of the Inscriptions. These longer and more famous texts, although scrutinized by all the foremost students of Maya glyphs, have only been analysed in part, because the mathematical data have been eliminated or are presented in a condensed form.

In Pl. II. *c*. the two opening glyphs declare the date "7 Cimi. 4 Xul." The third glyph (A2) is an inverted Ahau combined with a moon sign. Next is recorded "end of a Hotun," with the numeral 5 attached to the right side of the glyph. Numbers in this position usually denote addition, but possibly we have a "Hotun 5."[1] Glyph A3 clearly expresses "Katun 2" (A.D. 216), while the final glyph contains elements representing Ahau, Venus, and the moon. During Baktun 9 the nearest positions to Katun 2 occupied by 7 Cimi, 4 Xul. are 9.3.3.9.6 and 9.0.10.14.6. Clearly the relationships between the various time elements in the inscription have been suppressed, or the inscription does not refer to Baktun 9.

The second Madrid text (Pl. II. *a*) opens with a glyph containing a Kin sign, Ben-Ik sign, and a solstice element. This combination is believed by Spinden to

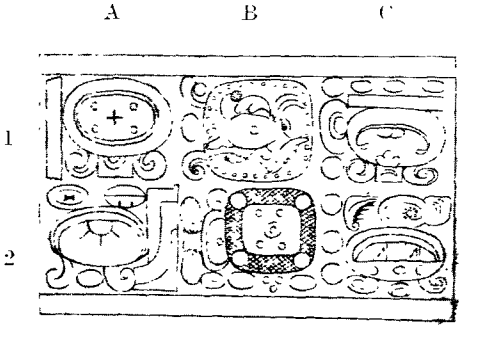


FIG. 1.—MAYA TEXT FROM PALENQUE. (AFTER DEL RIO.)

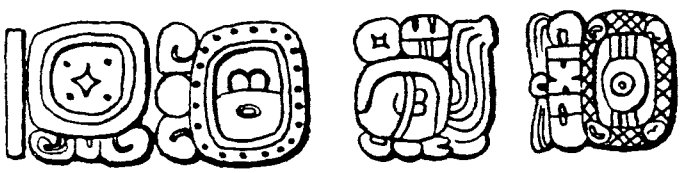
denote a solsticial round. Glyphs B1 and A2 record the endings of unknown periods. B2 reads "end of Katun 2," the same date recorded in the first text (A.D. 216). A3 contains a head of god C, the monkey-faced North Star god. Again we find astronomical data with the time elements suppressed.

Both the texts considered are carved in a peculiarly low and flat relief characteristic of Maya writing during the first half of Baktun 9. In glyph A2 of Pl. II. *c*, there is an unusual kind of Ahau, marked by indentations on either side of the face. This feature Morley has demonstrated to be characteristic of the first half of Baktun 9.[2] On two grounds then we may assume that the tablets were carved during that era. But the stairway on which they stood, leading from the lower to the upper rooms of the Palace, cannot well have been built before the upper rooms were erected, and

[1] This subject has been discussed by Morley, *Inscriptions at Copan*, p. 312.
[2] *Op. cit.*, p. 380, and fig. 56.

students are in general agreement that the upper rooms date from the end of Baktun 9. If this reasoning is sound, it follows that the tablets had been moved from their original position. Therefore they may have been associated with two other 6-glyph tablets from Palenque, similar in size and style, allied in subject matter, but of unknown provenance. These have been published by Del Rio and Castañeda. One of the originals is in the Museo Nacional at Mexico City,[1] but the present location of the other is unknown.

Del Rio's drawing of the inscription we reproduce in Fig. 1 : it has 6 glyphs arranged in 2 horizontal rows. Although stylistic comparison with the Madrid tablets is not possible, owing to the inadequate drawing, yet we judge that they belong together, because of the similar subject matter and the associated date. The text opens with the date " 5 Lamat, 1 Mol." The month sign is scarcely decipherable except for the encircling dots, so in Fig. 2, *a*, we show a properly inscribed example of the two glyphs from the Temple of the Inscriptions, where this date is repeated no less than five times. Glyphs A2 and B2 of Pl. II, *a*, also occur in the Temple of the Inscriptions, as shown in Fig. 2, *b* and *c*. The first is a combination of the Ben-Ik sign, an element suggesting Mol turned sideways and a winged suffix.



a *b* *c*

FIG. 2.—GLYPHS FROM THE TEMPLE OF THE INSCRIPTIONS.

The second glyph is marked by a hatched edge, perhaps representing night, which encloses a variable central element. C1 records the distance numbers 2 and 8 attached to a Uinal sign. The final glyph reads " Katun 3 " (A.D. 235), which falls on 2 Ahau, 18 Muan. The distance numbers, abbreviated in the Maya count, may read : 8.2, 2.8, 8.2.0, or 2.8.0. None of these possible combinations will connect 5 Lamat, 1 Mol, with Katun 3 during Baktun 9.

The Castañeda inscription we reproduce in Fig. 3. Evidently this drawing was not copied from Del Rio, but was made from the original, because the scale is given. The text reads " Tun 1 " (A1 left). " 12 Ahau, 8 Ceh " (A1 right, B1 left), " end of a period " (B1 right), " Katun 11 " (A2). Over the Ahau sign is a snake element supposed to denote the u kahlay katunob. The day and month recorded occur in 9.11.0.0.0 (A.D. 393). Glyph B2 contains a moon sign, but the last two glyphs are too badly drawn to attempt decipherment. While the date recorded in this text is much later than the others considered, nevertheless we group it with

[1] Saville (1928, fig. 1) has just published an excellent drawing made from a photograph

them because the size and arrangement of the inscription is similar, the text seemingly deals with parallel astronomical data, while the Ahau sign has the peculiar indented edges seen in glyph A2 of Pl. II, *c*, and is, therefore, stylistically similar.

In addition to the stone carvings, Del Rio sent to Madrid 11 fragments of stucco. Of these, 6 are the glyphs assembled in Pl. III. They read as follows :—

a, initial series introducing glyph :
b, Baktun 9 ;
c, Katun 4 ;
d, Tun 8 ;
e, (?) and 12 Tuns :
f, 12 Katuns and 16 Tuns.

At first glance it seems that we have in these glyphs a fragmentary initial and secondary series, but the variation in the size of the glyph-blocks, more pronounced

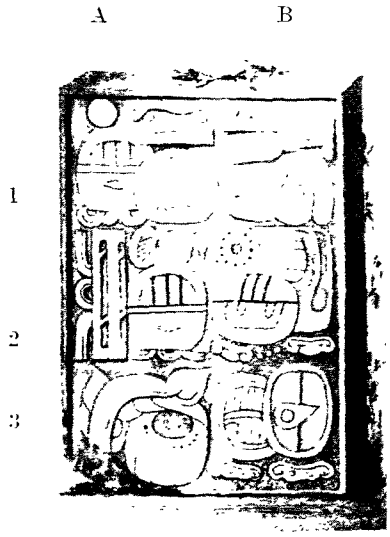


FIG. 3.—MAYA TEXT FROM PALENQUE. (AFTER CASTAÑEDA.)

than is indicated by the photographs, makes this impossible. An examination of Maudslay's photographs of Palenque reveals fragmentary stucco inscriptions at Palenque located as follows :—

(1) Palace, House A, east side, pier *a* ;
(2) Palace, House C, west side ;
(3) Palace, House D, pier *g* ;
(4) Temple of the Inscriptions, north side, pier *a*.

Into none of these texts can the Madrid glyphs be fitted with certainty. The House C inscription may be ruled out of consideration because the writing is much smaller

than the Madrid fragments. They do not come from House D, because the inscription there is not an initial series, as is indicated by the text still *in situ*. The House A text evidently is an initial series, for it reads " ? . ? . Katun 1. ? . ? Teen Kins. ? , ? . 7 Cumhu." The text on the pier of the Temple of the Inscriptions is one of the few instances illustrated by Maudslay with a drawing unaccompanied by a photograph.[1] A double column introducing glyph is indicated in the drawing. Doubt as to the correctness of this is raised by the sixth glyph, still partly preserved, which clearly is a month sign—Chen, Yax, Zac, or Ceh—where we ought to find a day sign in this position were the introducing glyph of double width. In both House A and D of the Palace there are fallen piers which may have carried stucco inscriptions. Definitely to locate the Madrid glyphs, however, it will, apparently, be necessary to carry casts of the backs to Palenque, where they may be fitted into their original positions. If this is ever done, the " Tun 9 " glyph shown in Fig. 4 should

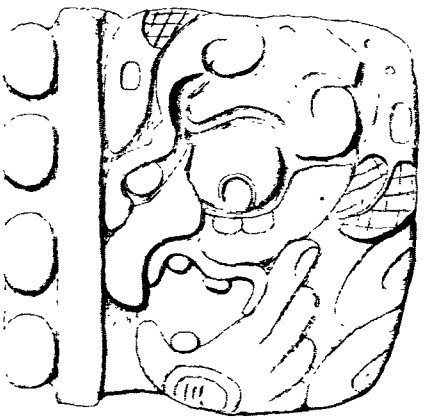


FIG. 4.—TUN GLYPH FROM PALENQUE. (AFTER HAMY.)

not be overlooked. This was removed from Palenque by Galindo and is now in Paris.

Four other fragments of stucco relief, sent to Madrid by Del Rio, " to denote the quality of the lime," we illustrate in Pl. IV. Of these, *c* and *e* are corner-pieces from the upper moulding on the sanctuary of the Temple of the Sun, as may be seen from an inspection of Maudslay's plans.[2] The identification is made certain by the statement of Del Rio that " some whimsical designs serving as ornaments to the corners of the house, I brought away." Each of them represents a head-variant of the Tun sign. A stucco head with a strap across the cheek (Pl. IV, *a*) comes from pier *f* of House D in the Palace, of which the present condition can be seen from Maudslay's drawing and photograph.[3] The figure to which the Madrid head belongs is that of a man seated on a head of the Long-Nosed god while a second standing

[1] Vol. iv, Pl. 53. [2] Vol. iv, Pl. 85. [3] Vol. iv, Pls. 33 and 37.

personage grasps his hair, apparently in the act of scalping him with an axe, or, perhaps more prosaically, cutting his hair. The foot and leg in Pl. IV. *d*, is also from House D of the Palace. While there are several missing feet, this fragment seems to have come from pier *b*, for the sandal still in place is almost identical. Finally, in Pl. IV. *b*, we illustrate a stucco head sculptured in the round: it is painted red. In type it resembles other heads from Palenque, but it is executed with unusual vigour and realism.

Such are the surviving Del Rio specimens. In addition, he sent other objects to Europe, including two caches of pottery, paint, spear-heads, and various ornaments. These, apparently, were foundation offerings placed under the floors of the Temples of the Cross and the Foliated Cross. Their present location is unknown, but it is possible that they have been preserved somewhere in Spain.

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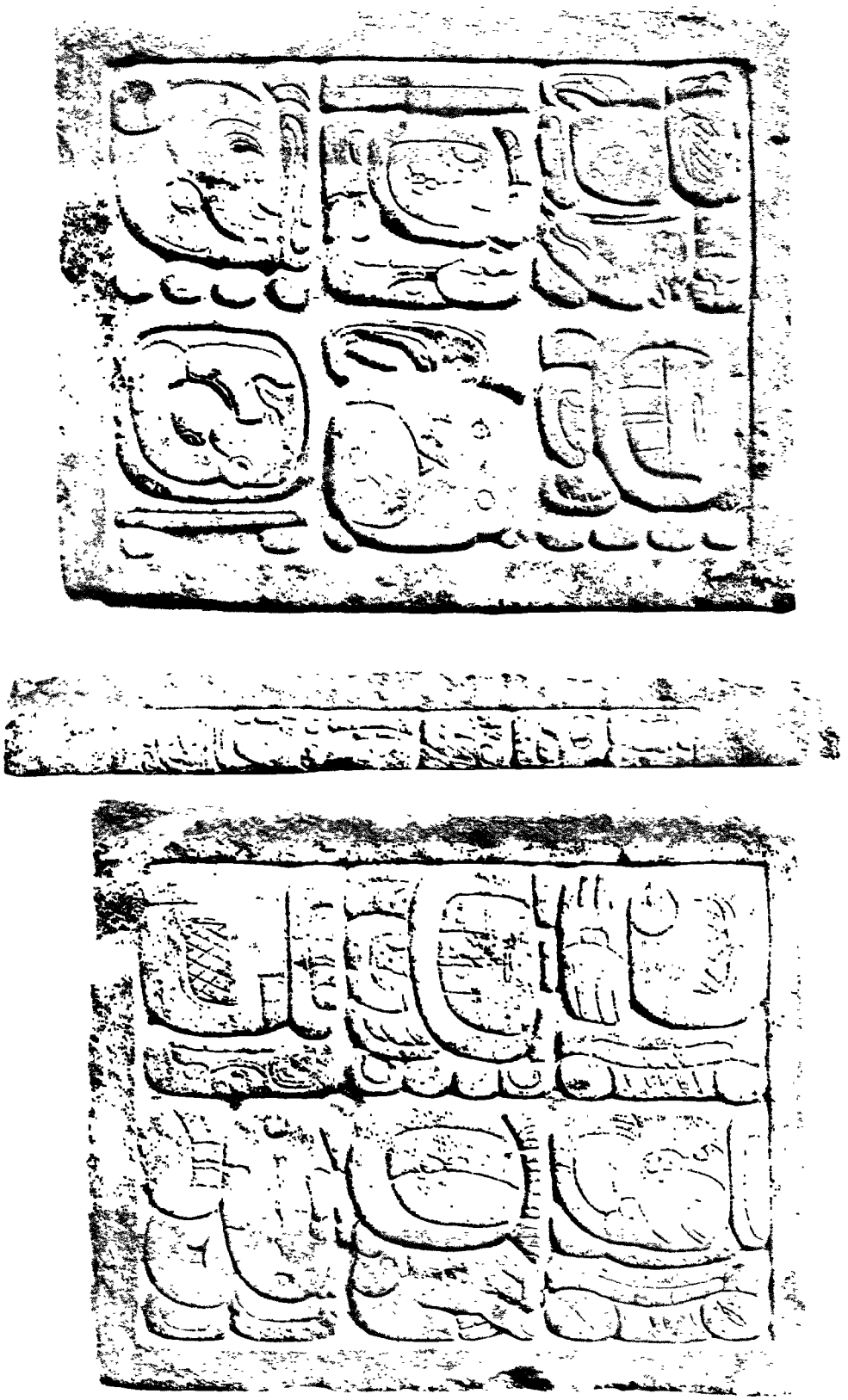
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b

a

SCULPTURED SLABS FROM THE PALACE, PALENQUE. *a* IN MUSEO ARQUEOLOGICO NACIONAL DE MADRID; *b* PLASTER CAST IN U.S. NATIONAL MUSEUM.

SCULPTURED FRAGMENTS FROM PALENQUE.



SCULPTURED STONE SLABS FROM PALENQUE. MUSEO ARQUEOLÓGICO NACIONAL DE MADRID.

SCULPTURED FRAGMENTS FROM PALENQUE.



a



b



c



d



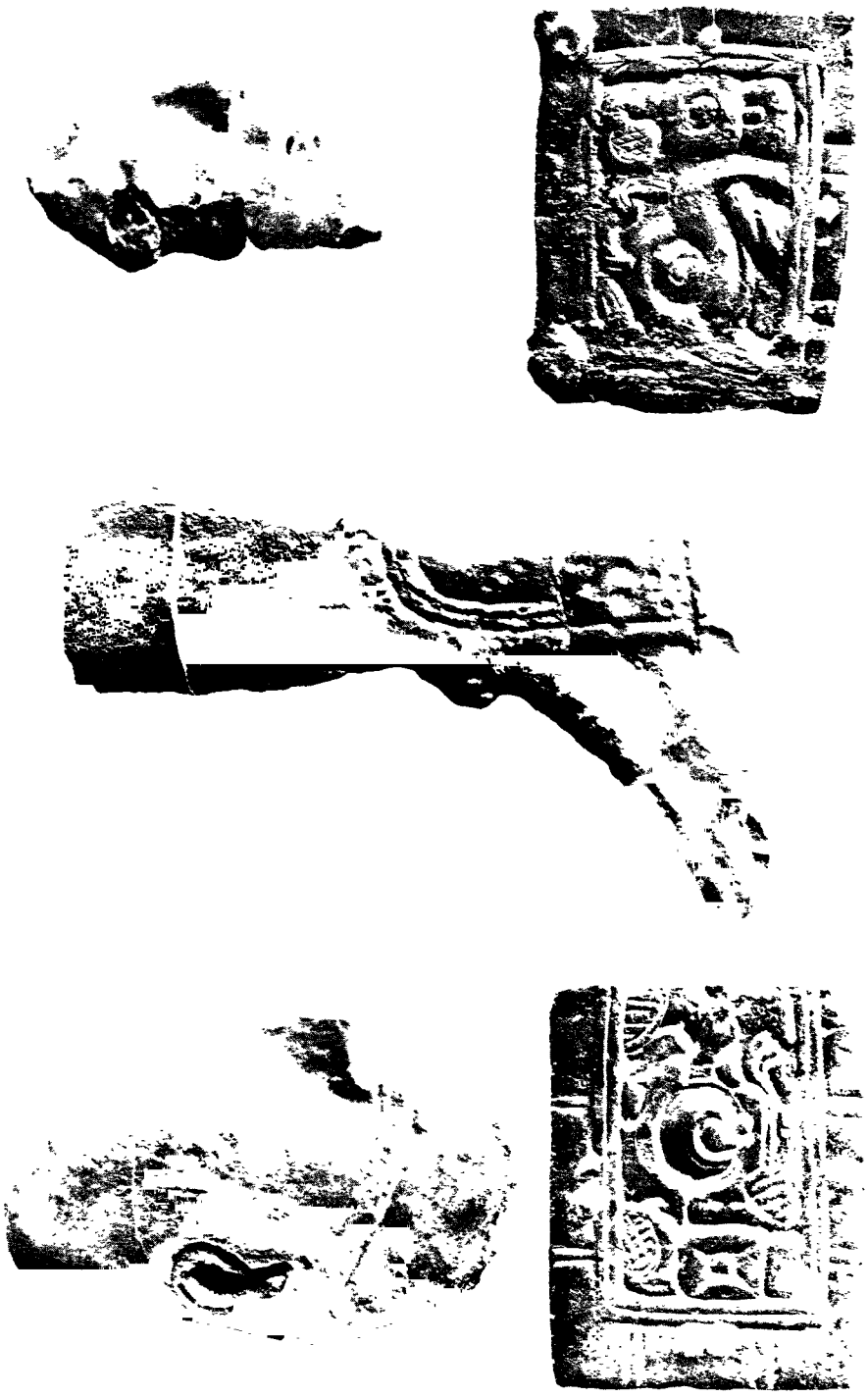
e



f

STUCCO GLYPHS FROM PALENQUE. MUSEO ARQUEOLÓGICO NACIONAL DE MADRID.

SCULPTURED FRAGMENTS FROM PALENQUE.



STUCCO FRAGMENTS FROM PALENQUE. MUSEO ARQUEOLÓGICO NACIONAL DE MADRID.

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THE LANGUAGES OF THE CENTRAL DIVISION OF PAPUA.

By Sidney H. Ray, M.A., F.R.A.I.

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I.—Introduction.

The Central Division of Papua extends in a south-easterly direction along the coast of the Gulf of Papua from Cape Possession to Macfarlane Harbour. It is separated from the Gulf Division by a line drawn due north from Cape Possession to the former German boundary; from the Eastern Division by a line drawn from Mount Brown to Macfarlane Harbour; and from the Territory of New Guinea and the Mambare, Kumusi, and North-east Divisions by the main mountain-range. The Central Division includes the upper basins of the Lakekamu and Biaru rivers, and the basins of the Angabunga (St. Joseph), Vanapa, Laloki (Brown and Goldie), and Wanigela (Kemp Welch) rivers. Melanesian villages are found along the lower courses of the Angabunga, Vanapa, Laloki, and Wanigela, and on the coast from near Cape Possession to Macfarlane Harbour. The villages west of Cape Possession and inland are Papuan.

The first specimen of the language of this part of New Guinea was obtained by J. Macgillivray in 1846 at Redscar Bay [CR 284][1]. Further specimens of the same language (Doura or Motu) were obtained by Wyatt Gill [CR 284] and A. W. Murray [CR 284] in 1876. School books in the languages at Port Moresby [CR 284] and Hood Bay [9][2] were issued in 1877 and 1878. O. Stone, in 1880, published a comparative vocabulary which, along with the Melanesian languages of Motu, Kirapuno (Keapara), Maiva and Laval (Roro), showed the first specimens of the Papuan dialects of Koitapu (Koita), and Ilema (Elema) [CR 284]. In the same year some short lists were printed by D'Albertis [1, 2]. The MSS. of several vocabularies collected by J. Chalmers on some of his journeys show that they were very carelessly

[1] References in this form are to the pages of the Cambridge Report. *See* Bibliography [50].

[2] References in this form are to the Bibliography at the end of this paper.

printed in 1889 [CR 285]. Since 1886, the London Missionary Society has published books in the Melanesian languages of Motu, Hula, and Keapara, and the Sacred Heart Mission has printed in Roro, but no Papuan language of the Central Division is represented by a single school-book or translation. Since 1889, many of the Annual Reports on New Guinea and Papua have contained vocabularies collected in the Central Division by officers of the Government [11, 12, 13, 43, 44, 45, 46, 47, 48]; these are noted in the List of Languages.

The linguistic position of the languages has been discussed by W. Schmidt [56], G. Friederici [25, 24], O. Dempwolff [15], and myself [51].

II.—List of Languages.

The following List of Languages of the Central Division of Papua is arranged as far as possible in geographical order from north-west to south-east. No language is admitted unless actual specimens have been examined. The numbers in brackets refer to the Bibliography. "Gr." indicates the existence of a Grammatical Notice.

1. *Melanesian Languages.*

Melanesian languages are spoken along the whole sea-board of this division, and only one entirely Papuan village (Kilokido in the Motu district) is found on the coast.

Mekeo.—Villages on the middle Angabunga (St. Joseph) river: Inawabui-kipo, Inawaiya, Eboa, Jesu-boibona, Inawa, Oriro-petana, Aipiana, Veifa, Amoamo-piofa, Raiai, Bebeo, Inawabui-kaianga, etc. Gr. [50, 61.]

Rapeka.—Vikiuna and hill villages east of Mekeo. [63.]

Kuni.—Villages on the Upper Angabunga (Arabule) and Aroa (Dilafa) rivers, between Mafulu valley and Pokau, Idoido, Dilava, Keakamana, etc. [22, 62, 63.]

Roro.—Villages on Yule Island and round Hall Sound and lower Angabunga River, also along coast from Cape Possession to Cape Kapripata. Gr. [61.]

Waima.—Western end of Roro district in villages of Waima (Maiva = Motu name) and Kevori.

Pokau (Lala, or Nara).—Hill district near coast east of Hall Sound: Vanuamai, Oroi, Alaala, Diumana, Dubu, Lalime, Kaiau (Bokama), Abo, and Epa. Gr. [50.]

Kabadi.—Delta of Vanapa river, between Aroa river and Galley Reach. Gr. [60, 66.]

Doura.—In a single village at the head of Galley Reach [62, 63].

Motu.—Villages on coast from Galley Reach to Round Head: Delena (Hall Sound), Manumanu, Lealea, Boera, Tatana, Hanuabada (Port Moresby), Vabukori, Pari, Tupuseleia, Gaile, and Kapakapa. Gr. [CR 285.]



LANGUAGE MAP. CENTRAL DIVISION OF PAPUA.

F 2

Sinaungolo (Sinaugolo).—Rigo, Saroa and other villages inland from Kapakapa. Gr. [55, 58.]

Ikoro.—Villages of Komala, Gemaiboru, Tagama, Kaketo, Palavoini, and Gaboni, between Sinaungolo and the coast. [58.]

Hula (Bula'a).—Bula'a, Kalo, Babaka and villages on Hood Peninsula between Beagle and Hood Bays. Gr.

Keapara (Kerepunu).—Villages of Keapara and Alakune on east shore of Hood Lagoon. Gr.

Rubi.—Villages of Kererupu, west of the middle Wanigela (Kemp Welch) river.

Galoma (Aroma).—Villages from Paramana Point to Kererupu. Gr.

Keakalo (Keakoro).—Maopa village in Keakoro Bay.

Melanesian languages are discussed in CR 413–503.

2. *Papuan Languages.*

KUKUKUKU GROUP.

Several languages or tribes in the extreme north-west corner of the Central Division are called Kukukuku. They are said to extend eastward from the Arabi river towards the Tauri, Olipai and Vailala rivers and to the north of them. [45.]

Ashavi.—Arabi village, five miles above the junction of the Arabi and Little Arabi (Tiveri) tributaries of the Lakekamu, 20 miles from Nepa [13, 45]. This is the same as a vocabulary called "Kukukuku from Lakekamu." [46.]

Madinava.—A village on the Upper Tiveri in the Nepa district [47]. A slightly different list from the Upper Tiveri river is added in brackets.

Williams River.—The language across the Arabi and Williams river. This differs from Ashavi and Madinava. [12.]

Two other languages called Kukukuku are recorded in the Gulf Division from the Bailala (Vailala) river. [44, 45.]

KOVIO GROUP.

These languages are spoken in the upper valleys of the Kunimaipa (upper Lakekamu), Akaifoa and Inawarunga (upper Biaru) rivers around Mount Yule. The following vocabularies are recorded:—

Kunimaipa.—Mizhani and Gaizhiri tribes in Kunimaipa valley. [46.]

Sini.—On Kau branch of Waria river, north-west of Mount Strong in Mandated Territory. [46.]

Biaru and Loloipa.—Main range west of Mount Albert Edward. [46.]

Goiefu (Kuefa).—West of Mount Albert Edward in Kunimaipa, Jevivataiz and Gaizheri valleys. [46.]

Kuepa.—Village of Ketidaniauk, 3 miles north of Mount Yule, and villages east of Yule to Loloipa, and south to the Angabunga (St. Joseph) river. [12.]

Kovio (1).—Round about Mount Yule, especially in Inava valley.

Kovio (2).—Kwoifa, Kerepi, Karuama and Lopiko, near Mount Yule. [47.]

Oro Lopiko.—Kamaweka in valley of Inava, upper Biaru river. [21.]

AFOA GROUP.

These languages are spoken in the upper valleys of the Angabunga tributaries from the former German boundary to the west dome of Mount Albert Edward. A grammar has been published of the Tauata dialect. [21.]

Afoa.—From Mount Davidson to the head waters of the Angabunga.

Tauata.—Villages about 8° 30′ S. lat. and 147° W. long. in the Auga valley Gr. [21.]

Ambo (Afoa, Apekoma).—Goda village, Mount Pitsoko. [13.]

Deba.—North of Mount Pitsoko to former German boundary (Ambo, Uale, Ikotoro, Ilaia, Aibala (Aivara) clans). [5.]

Goilala.—Several vocabularies are found under this name. I have distinguished them as :—

Goilala (1).—Noroawu village near Mount Chamberlain. [47.]

Goilala (2).—Veili village at head of Angabunga river, south-west of Mount Albert Edward ; called also Kaiwarra, partly in the Mamba division.

Goilala (3).—North-west of Mount Albert Edward district in the Mamba division. [45.]

MAFULU (MAMBULE) GROUP.

Languages or dialects of this group are found from the Aduala tributary of the Alabule (upper Angabunga) and the upper Vanapa rivers eastward to the Chirima (Sirima) tributary of the Mamba River. A Fuyuge grammar has been published. [67.]

Fuyuge.—Sivu and villages around the Sacred Heart Mission Station at Mafulu. [13, 20, 46, 67.]

Onunge.—Upper Vetapu river. [12.]

Agita.—Villages of Gagara and Simola north of Mount Scratchley in the Mamba division. [43.] Another vocabulary (Gagara) shows considerable differences. [4.]

Sikube.—Upper Vetapu river, north of Mount Lilley.

Gomali.—Vetapu river. [12.]

Tauada.—Ajibara (Asiba) river, Mambare division. [12.]

Kabana.—Chalmers' vocabulary, uncertain.

Vovoi.—Chirima river, Mambare division. [12.]

Kambisa.—Chirima (Sirima) valley [4]. Another vocabulary called Kambesi at Kambesi, Kandalana, Toweda (Tauada ?) A. Sirima, and Akari tribes at Menga and other villages in the Chirima and Asiba valleys, Mambare division. [47.]

Korona.—Head of Galley Reach.

KOIARI GROUP.

Languages more or less related to one another are found on both sides of the main (Owen Stanley) range from Mount Scratchley to Mount Nisbet, and then west of the very mountainous country to the upper tributaries of the Wanigela (Kemp Welch) river.

Neneba Sub-group.

Neneba.—North-east of Mount Scratchley, west of the Ajibara (Asiba) river in Mamba division.

Kotoi Sub-group.

Kotoi.—Toribo (Tobiri) and Poini (Pione) villages on Dala tributary of the upper Vanapa river. [47.]

Gosisi.—Gosisi tributary of Dala river.

Suku.—Villages on Mount Cameron.

Uabari.—Bebeni village on Farisa creek between Kotoi and Hagari. [7.]

Wowonga Sub-group.

Wowonga.—Language of Weloia near Kokoda in Kumusi division. [43, 63.]

Biagi and Hugu.—Language of Gavana. [43, 63.]

Isurava.—Village in Main range on the Kokoda side of the Gap. [43, 63.]

Karukaru.—Villages of Beda and Galina on west of Mount Scratchley and south of Asiba river in Kumusi division. [12.]

Iworo.—On lower slopes of the Main range near the Gap.

Kagi Sub-group.

Kagi (Agi).—Kagi, Serigina, and Dubi people, Mount Bellamy. [13.] Another vocabulary [4] in brackets.

Hagari.—Hagari and Boura, in hills about upper Naoro (Brown) river, north-east of Port Moresby.

Wamai.—Wamai, Manari, and Efogi people about upper Naoro river. [7.]

Itu.—On the Naoro river. Allied to Eaha. [7.]

Meroka (Moroka).—East of Uberi.

Uberi.—Mount Astrolabe [63]. The Kupele of Chalmers [CR 359].

Ebe.—Astrolabe mountains, north of Uberi.

Koita Sub-group.

Koita.—Kidokido village, Redscar Head and Motu villages. Gr. [CR.]

Koiari.—Villages in Astrolabe mountains. Gr. [CR.]

Sogeri.—Upper Laloki river. [7.]

Iarumi.—Slopes of Astrolabe range behind Sogeri. Uniori Asubaigi, Korohi, Barere, Senaveri and Umudori people. [7.]

Eikiri.—Between Goldie and Laloki rivers.

Maiari and Favele.—Villages in Astrolabe range.

MULAHA GROUP.

Two somewhat different dialects have been recorded, but both are now extinct. Gr. [CR.]

Mulaha.—Coast at Kaile.

Iaibu.—Coast at Kaile.

KWALE GROUP.

These languages are unlike the Koiari and Kokila, west and east. A grammar has been compiled by Dr. Strong from the notes of Rev. H. P. Schlenker. [55.]

Garia.—Villages of Gumoridobo and Gea on Wujeva (Hunter) river about 10 miles above its junction with the Wanigela. [62.]

Lakumi.—Villages of Lakumi, Iarumi, Managoro (Manukolu), Vasila, Girab, Usea, Gosoro and Gea, Mount Bride. [7.]

Kwale.—Villages of Mount Douglas, about 25 miles inland from Kapakapa. [55, 62, 63.]

Manukolu.—Between the Wanigela and the coast.

KOKILA GROUP.

Kokila (1).—At head waters of the Wanigela river. [62, 63.]

Kokila (2).—North of the Una (Margaret) branch of the Wanigela.

Orai iu.—Kanikaba village on Imila river, north-east of Vilirupu. Kuru on slope of Mount Brown in the Eastern Division, and Borioni, Onuai, Siolo, Duobai, and Kamouna on slopes of Mount Brown in the North-eastern Division. [47.]

Gebi.—Kuru villages on slopes of Mount Brown (Eastern Division) and westward to Central Division, along Owen Stanley Range to Korigio people. [48.]

SERAMINA GROUP.

Seramina.—Demori and Seramina district on the Wanigela river. [62, 63.]

Barai.—Bagoro village between Mount Potter and Mount Baron, on a mountain called Sebe-hore. [12.]

Nigubaiba.—Villages of Nigubaiba, Iawarere, Deduri, Seramina, Iari and Pitoni on the upper Aleme (Musgrave) and Adai (or Iaba) branches of the Wanigela. [13.]

Mogoni.—Bala village Mount Nesbit, near head-waters of Moni (upper Musa) river, in North-eastern Division. [30.]

Papuan languages are discussed in CR 291–412.

III.—NOTE ON ORTHOGRAPHY.

The spelling used in this notice is mainly that of the Annual Reports on British New Guinea or Papua, and follows the *Rules for the Spelling of Geographical Names for British Official Use* published by the Royal Geographical Society.

The vowels are sounded generally as in Italian, the consonants as in English. In Kwale a peculiar sound is written "zj." and another "vw." I have written "ò" for the sound of "aw" in "law," for which Dr. Strong writes "oā" and the Government Officers sometimes "or." The glottal stop is written "'."

There are some confusions of sounds especially between k, g and ɣ (the Melanesian g). Where the last has been noted usually as "gh" I have written it "ɣ." In Keapara k = hard g, and g is written for ɣ. In Koiari, ɣ changes with r, k, h, v, and even with wh.

In Mekeo and Kuni, ch represents ś (ts), and one Kabadi vocabulary has "ch." The sound of t before i in Motu is wrongly stated by Lawes to be "ts." In Fuyuge the French missionaries write j for y.

IV.—NOTES ON GRAMMAR.

Nouns.

The Melanesian languages show two classes of nouns marked by different methods of indicating possession. Names of parts of the body, relations, and some local nouns (*i.e.* names of positions) are used with suffixed pronouns, but other nouns require the use of a possessive word to which the pronoun is suffixed. (*Cf.* Pronouns.) The two classes of nouns are not distinguished in the Papuan languages.

The plural number is generally indicated by an adjective of number following the noun. In Motu the plural of persons may be shown by reduplicating the first syllable (*mero*, boy : *memero*, boys), or by changing the accent (*hahíne*, woman : *háhine*, women). In Kabadi singular nouns suffix *-na*, plural nouns suffix *-da*. These are identical with the suffixed pronouns of the third person singular and plural, but are used independently : *kau-na*, a man ; *kau-da*, men. Also in Motu, *tau-na*, man ; *tau-dia*, men : and Keapara *au-na*, man ; *au-ra* men. In other languages this plural is only found in genitive constructions.

Mekeo : *pangua au-nga* (or *au*), village man ; *pangua au-i*, village men.
Kuni : *au lau-na*, tree leaf ; *au lau-tsi*, tree leaves.
Roro : *aira hau-na*, village man : *aiara hau-kia*, village men.
Sinaungolo : *ngau lau-na*, tree leaf ; *ngau lau-ri*, tree leaves.
Galoma : *vanua gau-na*, village man ; *vanua gau-ria*, village men.

In the Papuan languages, Fuyuge denotes the plural of personal nouns by changing a final *e* to *i* ; *sole*, young man ; *soli*, young men. A change to *a* may denote the dual. In Tauata names of persons (rarely of things) suffix *-une* for the plural : *iva*, woman ; *iva-une*, women. In Koita the singular has the suffix *-raki*, the plural *-baki* : *ura idi-wa-raki*, forest tree : *ura idi-abaki*, forest trees. In the first example *-wa* is possessive.

The genitive in the Melanesian languages is expressed by the suffixed possessive pronoun, or by a separate possessive word (*e* or *ge*) with suffix, according to whether the noun belongs to the first or second class. Examples have already been given of the first class : man, leaf. The following examples show a noun of the second class :—

Roro : *hau ena awarui* ;
Mekeo : *papiau ienga io* ;
Pokau : *kau ena io* ;
Motu : *tau ena io* ;
Sinaungolo : *tau gena gio* :
Hula and Keapara : *au gena kolova* :
Galoma : *gau gena olova* ;

all meaning "man's spear" (man possession-his spear).

If the property is to be eaten, *e* or *ge* is changed to *a* or *ga*.

In the Papuan Fuyuge the genitive is shown by the suffixed personal pronoun *-u*, its ; *ocol'u ma*, pig's hair (pig-its hair). In Kwale *-ga* is suffixed : *nini isa-ga*, wing of bird (bird wing-of). In Koita *-va* (*wa*) or *-ka* is suffixed : *oho kakae-va*, tooth of pig (pig tooth-of) : *idi tahu-ka*, leaf of tree (tree leaf-of). Also in Koiari : *idi wate-ka*, bark of tree (tree bark-of).

Pronouns.

These are shown in the following tables.

Melanesian Pronouns.

		1st Person.	2nd Person.	3rd Person.
Mekeo	*Sing.*	ka-i ; -da ; -u	oi ; -o ; -mu	a ; -a, -na *or* -ka-a -ka-i *or* -ka-a.
	Plur.	ita ; -a ; -a (inclus.)	oi ; -mi ; -mi	ai ; -i , -i.
		kai ; -mai ; -mai (exclus.)		
Rapeka . ..	*Sing.*	kai ; — ; -u	oi , — ; —	ia , — ; -na
	Plur.	ita ; — ; — inclus.)	umui ; — ; —	ise ; — ; —
		ai ; — ; — exclus.)		
Kuni	*Sing.*	yau ; -au ; -'u	oi ; -o , -mu	ia ; -a *or* -i ; -i
	Plur.	ika ; -ka ; -ka (inclus.)	imwi ; -mwi ; -mwi	isi ; -si ; -si
		imai ; -mai ; -mai (exclus.)		
Roro	*Sing.*	au , -na'u ; -'u	oi ; -o *or* -mo , -mu	ia ; -na ; -na
	Plur.	aika ; -naka ; -ka (inclus.)	wai ; -mami ; -mi	ia ; -naka ; -ka
		ai ; -nam ; ; -mai (exclus.)		
Waima	*Sing.*	au ; — ; -u	oi , — ; -mu	ia ; — ; -na
	Plur.	aika ; — ; — (inclus.	wai ; — ; -mi	ia ; — ; -ka
		ai , — ; -mai (exclus.)		
Pokau	*Sing*	lau ; -u ; -u	oni ; -mu ; -mu	ia ; -ia, -la, -a *or* -la ; -na
	Plur.	ita ; -ta *or* ka ; -ta (inclus.)	oi ; -mui ; -mui	ia ; -ta ; -ta
		lei ; -mai ; -mai (exclus.)		
Kabadi	*Sing.*	nana ; -u ; -u	onina ; -o ; -mu	iana ; -a ; -na
	Plur.	isada ; -ka ; -ka (inclus.)	uida ; -mui ; -mui	iada ; -da ; -da
		naida ; -mai ; -mai (exclus.)		
Doura	*Sing.*	nau ; — ; -u	oi ; — ; -mu	ia ; — ; -na
	Plur.	ita ; — ; -da (inclus.)	umu ; — ; -mui	ia *or* isia ; — ; -d
		nau *or* (naimai) ; — ; -u (exclus.)		
Motu	*Sing.*	lau , -gu ; -gu	oi ; -mu ; -mu	ia ; -la, -a ; -na
	Plur.	ita ; -da ; -dia (inclus.)	umui ; -mui ; -mui	idia ; -idia ; -dia ; -dia
		ai ; -mai ; -mai (exclus.)		
Sinaungolo ...	*Sing.*	au ; -gu ; -gu	ngoi ; -mu ; -mu	gea ; -ia, -a ; -na
	Plur.	ita ; -ra ; -ra (inclus.)	ngomi ; -mi ; -mi	gea ; ri ; -ri
		ngai ; -ma ; -ma (exclus.)		
Hula	*Sing.*	au ; -ku ; -gu	oi ; -mu ; -mu	ia , -a ; -na
	Plur.	ita ; — ; -ra (inclus.)	omi ; -mi ; -mi	ila , ra -ra, -da -ria
		ai ; -mai ; -ma (exclus.)		
Keapara	*Sing.*	au ; -gu ; -gu	oi ; -mu ; -mu	ia ; -la , -a ; -na
	Plur.	ita ; -ra ; -ra (inclus.)	omi ; -mi ; -mi	ila ; -ra ; -ra, -ria
		ai ; -mai ; -mai (exclus.)		
Rubi	*Sing.*	au , — ; gu	vii ; — ; -m	ia ; — ; -na
	Plur.	ita ; — ; ra (inclus.)	gomi ; — ; mi	ia ; — ; ri
		ai ; — ; mai (exclus.)		

Melanesian Pronouns—continued.

		1st Person.	2nd Person.	3rd Person.
Galoma	*Sing.*	lau ; -ku ; -ku	goi : -m ; -mu	ia : — ; -na
	Plur.	ia : — ; ra (inclus.) ai ; — : -ma (exclus.)	gomi ; -mui ; -mi	ila : — : -ria, -ria
Keakalo	*Sing.*	eau : — ; -ga, -ku	goi : — ; -mu	ia ; — ; -na
	Plur.	— ; — (inclus.) lai ; — ; mai (exclus.)	— ; -mui ; -mui, -mi	ila : — : -ria

Papuan Pronouns.

		1st Person.	2nd Person.	3rd Person.
Madinava	*Sing.*	amaga	dahagani (?)	mia (?)
	Plur.	dadi (inclus.) (?) lagaga (exclus.) (?)	amaga (?)	iahui (?)
Kunimaipa ...	*Sing.*	—	ni	—
Sini...	*Sing.*	—	nine	—
Goiefu	*Sing.*	—	ni	—
	Plur.	—	—	paro
Kuepa	*Sing.*	na	ne	—
	Plur.	—	ne	—
Kovio (1)	*Sing.*	na	ni	pi
	Plur.	davi (inclus.) dari (exclus.)	ari	paro
,, (2)	*Sing.*	na	ni	pi
Oru Lopiko ...	*Sing.*	na, naro	ni, niro	pi, piro
	Plur.	dae, daro	ali, alero	valo, valoro
Afoa	*Sing.*	nai	nui	—
Tauata	*Sing.*	nai ; na ; neve	nui ; nu ; nie	omei ; omu ; omene
	Plur.	nanei ; nane ; nanene	nunei ; nune ; nunene	otei ; ote ; otene
	Dual.	nonei ; none ; nonene	nuvei ; nuve ; nuvene	olei ; ole ; olene
Ambo	*Sing.*	naime	nui	—
Deba	*Sing.*	nai-ime	loika	nuime
	Plur.	nenela	nuneia	ali
Goilala (1) ...	*Sing.*	na	omei (?)	nemei (?)
,, (2) ...	*Sing.*	nauwi	omu	—
,, (3) ...	*Sing.*	wari	nute	—
Fuyuge	*Sing.*	na, nave, nani ; naula	nu, nove, numi ; nula	u (ne), ove, umi ; ula
	Plur.	di, dini ; diula	yi, yimi ; yula	mu, muni ; mula
	Dual.	da, dani ; daula	ya, yani ; yaula	tu, tuni ; tula
Sikube	*Sing.*	na-mo	nuni	—
Kabana	*Sing.*	nau	—	—
Kambisa	*Sing.*	na	nu	hu
	Plur.	—	—	haru
Kambesi	*Sing.*	na	nunatedi	nukarere (m), nuka-tenower (f.)
	Plur.	mani	nunatedi	hangita
Neneba	*Sing.*	di	ai	—
Kotoi	*Sing.*	tai	dautai	ditima
	Plur.	onore	—	anore-ima

Papuan Pronouns—continued.

		1st Person.	2nd Person.	3rd Person.
Suku	*Sing.*	da	a	[illegible]
Uabari	*Sing.*	detunu	vadeu	[illegible] tuna
	Plur.	fadeu	—	avade-uma
Wowonga	*Sing.*	da	—	—
Biagi .	*Sing.*	da	—	—
Karukaru	*Sing.*	daigah	aigalute	[illegible] uwa
	Plur.	latibata	ala	—
Kagi	*Sing.*	da	a	ke
	Plur.	detai	baita-tee	kau-nunanu
Hagari	*Sing.*	vaikovego, da	oreaike1	nore-kona
	Plur.	vaikovego	—	—
Uamai	*Sing.*	da	—	[illegible]
	Plur.	dutima	teve	[illegible]
Itu	*Sing.*	da	a	[illegible]
	Plur.	da-ima	oene	[illegible]
Merok[illegible] ...	*Sing.*	da	a	[illegible]
	Plur.	nolona	ia	iabu
Uberi	*Sing.*	da	a, aa	oe, avu
	Plur.	no, noea	ia	iabu, iabui
Koita	*Sing.*	da	a	au
	Plur.	no	yai	yau
	Dual.	nokanabu	yaiabu	yauabu
Koiari	*Sing.*	da	a	eke
	Plur.	noikoa	yane	yabuia
Sogeri	*Sing.*	da	(a)	okore
	Plur.	(noima)	—	(daia)
Iarumi	*Sing.*	dako	a	auko
	Plur.	nokoa	nokeinaore	iaukiota
Eikiri	*Sing.*	da	a	oe
	Plur.	noea	ia	iabu
Maiari . ..	*Sing.*	da	a	oe
	Plur.	noea	ia	iabu
Favele	*Sing.*	da	a	oe
	Plur.	noea	ia	iabu
Mulaha	*Sing.*	ua, uato	va, uahe	o, ohe1
	Plur.	nai (inclus.) nah- (exclus.)	vabihe	vau, oi
	Dual.	nu-ebaine	vabihe-ebaine	[illegible]
Isivai	*Sing.*	luwa, yokabu	wa, uwa	aoo
	Plur.	nai (inclus.)	wabihu, wabi	wau
Garia	*Sing.*	egi	ahe, ga	[illegible]
Lakiroi	*Sing.*	(eme)	(va)	(noo)
	Plur.	(eme-dau)	(eneka)	(nuanamo)
Kwale	*Sing.*	ege	ga	ami
	Plur.	emege	zja	zue
Mavukolu . . .	*Sing.*	eme	va	oi
	Plur.	eme	va	—
Kokila (2) . .	*Sing.*	nai-aku	amia = *man*	amia-boma
	Plur.	bururi	amia	amia-tau, [illegible] = *man*
Orangai	*Sing.*	naima	ia	nu-ede
	Plur.	henama	ia	ia-iemaili

Papuan Pronouns—continued.

		1st Person.	2nd Person.	3rd Person.
Barai ...	...	*Sing.* na	a	—
Nigubaiba	...	*Sing.* na	a	are
		Plur. nuavao	a	ia
Mogoni ...	...	*Sing.* ana	a	—
		Plur. anabia	a	—

The Melanesian pronouns appear in three forms. The first is the complete pronoun, the second follows a verb or preposition, the third is suffixed to nouns or the possessive particles to denote possession. An example from Motu will illustrate the use: *Ia e koau*, he (*ia*) said: *oi ia o heni-a*, thou (*oi*). him (*ia*). gave him (*a*); *lau tama-gu e-na ruma*, my father's house; *lau*, I; *-gu*, my: *-na*, his. The possessive noun used with the suffix for ordinary things is *e*, except in Hula and Keapara, *ge*, and Sinaungolo. *nge*. When the possession is for food these become *a*. *ha*, or *nga*. (*Cf.* CR 437.)

The Papuan languages prefix the personal pronoun to indicate possession sometimes in a slightly changed form; *e.g.* Koiari: *di-ada*, my hand; Koita: *di-yage*, my house; Kwale: *ege-ubuma*, my eye. In Kwale sometimes the thing possessed takes the suffix *-ga*: *ege dabu-ga*, I cloth-of. my cloth. In Tauata the possessive pronoun is formed by the suffix *-ne* (except in 1st and 2nd sing.) and precedes the noun: *neve kiate*, my house. In Fuyuge possessive pronouns are formed by prefixing the personal to the noun *ula*, thing, or to *u* alone: *na-u me*, or *na-ula me*, my son. In the table of pronouns the Tauata and Fuyuge possessives follow the personal. In Kovio the suffix added to the personal pronoun appears to be *-mai*: *nemai tupumagi*, my house.

Verbs.

The Melanesian verb is conjugated by variable particles preceding, and changing for person and number. The initial consonant or syllable may change for tense, and tense may be shown by an adverbial suffix. Sometimes both changed particle and suffix are in use. A table of Melanesian verbal particles will be found at CR 455.

In the Papuan languages of the Central Division the verbal construction varies. In Tauata tense is indicated by the verb-ending. In the present and past tenses the first and second personal endings are the same (*Cf.* [21]. Verbs.) In Fuyuge the verb does not show person or number, but there are tenses and modes shown by changes in the final syllable. Some are very irregular. (*Cf.* [68]. p. 318.) In Koita and Koiari tense is shown by suffixes: present *-ma*, *-sa*. indefinite *-na*,

past *-ne*, *-ge*, conditional *-re*, imperative *-o*. In Kwale also tense is shown by the verbal endings. The present suffix is *-'ohe*, past *-eha*, far past *-elo*, future *-'una*, imperative *o'i*. The subject of the verb is shown by the particle *a* following the pronoun. In transitive verbs the object precedes, and in some examples the indirect pronominal object is shown by a prefix: e.g. *ga a ege ene'ohe*, you to-me give: *ege a ga gave 'ohe*, I to-you give: *ane a emege life 'ohe*, he to-us gives: *ege a eje gaeha*, I to-them gave; *ege a hane 'una*, I to-him will give: *ane a ane ne 'ohe*, he says to him.

All the Papuan verbs of the Central Division require further study. (*Cf.* CR 347–361.)

Numerals.

A table of numerals follows on pp. 79–82. The Melanesian forms have been discussed in CR 463–478, and the Papuan in the same work (pp. 350, 361).

V.—VOCABULARIES.

The Melanesian vocabularies of the Central Division differ considerably from one another, but even the short specimens here given (pp. 83–84) contain words common in the Island Melanesian languages, and in Indonesian. The words for banana, dog, and fish appear to be local. Those for fire, pig, and tooth are of uncertain connection. Comparisons should be made with C.R. 482–503 and [15, 56, 23, 24].

The Papuan languages appear to fall into at least eight entirely distinct divisions.

Mekeo	1. angaomo	2. ngua	3. olo	4. pangi	5. ima	—
	6. ima-ngea-angaomo	7. ima-ngea ngua	8. ima ngea-olo	9. ima-ngea-pangi	10. ima-ngea ima, *or* nanga	20. nanga-rua
Rapeka	1. ka-unamo	2. nua-bona	3. koi-yabona	4. bani abona	5. ima-bona	—
	6. ka-unamo	7. nua-bona	8. koi-yabona	9. nua-bona	10. ogaka	20. ogaka-nuabona
Kuni	1. kaona	2. lua	3. koi, *or* luana-kaona	4. luana-ove-lua	(koi *few.*)	-
Roro	1. ha, hanomo	2. rua, abahai	3. aitao	1. bam, abarua	5. ima	-
	6. ab-aitao	7. ab-aitao-hanomo	8. aba-bani	9. aba bam-hanomo	10. haiau, araubana	20. haiau-rua
						100. zinabui
Waima	1. hanomona	2. rua	3. auhau	4. vani	5. ima	—
	6. av-auhau	7. av-auhau-hanomo	8. ava-vani	9.	10. haiau-haea	20.
						100. hinavu
Pokau	1. ka, kamona, kala	2. lua	3. koi	4. vani	5. iua	-
	6. kala-koi	7. kala-koi ka	8. kala vani	9. kalavani ka	10. ouka, oka	20. lua-navui
						100. zinavu
Kabadi	1. ka, kabea	2. rua	3. koi	4. vani	5. ima	
	6. kara-koi	7. kara koi kapea	8. kara vani	9. kara-vani kapea	10. oka	20. rua avui
						100. boubou
Doura	1. kaona	2. lua	3. koi	4. hani	5. ima	-
	6. ima-kaona	7. ima-ua	8. ima-koi	9. ima-hani	10. uka	
Motu	1. ta-mona	2. rua	3. toi	4. hani	5. ima	
	6. taura-toi	7. hitu	8. taura-hani	9. taura-hani-ta	10. kwawta	20. rua-ahui
						100. simahu
Sinaungolo ..	1. sebona	2. hualua	3. toitoi	4. vaivasi	5. imaima	- -
	6. imaima-sebona	7. imaima-hualua	8. imaima-toitoi	9. imaima-vaivasi	10. gabanana	-
Hula	1. ka, kopuna	2. hualua	3. koikoi	4. vaivai	5. imaima	
	6. kaula koi	7. mapere-kaula-vaivai	8. kaula vaivai	9. mapere ka-gahalana	10. gahalana	
Keapara ...	1. obuna	2. hualua	3. oua	4. vaivai	5. imaima	
	6. aula-oi	7. mabere-aula-vaivai	8. aula vaivai	9. mabere a-gahalana	10. gahalana, gara-hana	
Galoma and Keakalo	1. abuna	2. hualua	3. oioi	4. baibai	5. imaima	
	6. aula-oi	7. aula oi wabuna	8. aula vaivai	9. aula-wai-wabuna	10. kapanana	
Rubi	1. ta	2. wuā	3. toitoi	4. watiwati	5. imaima	
	6. imaima-ta	7. imaima-wuā	8. imaima-toitoi	9. imaima-watiwati	10. gubanana	-

Papuan Numerals.

Madmava ...	1. kaiewa, iwa	2. *iwawaga, kairewa*				
Williams River ...	1. elo	2. kongo	3. wolo	4. luo	5. kario	
Kuepa	1. gaunai	2. kalidalo	3. nadalo-nuevi	4. napoi wonna	5. nannnamo-gače	
Kovio (1) ..	1. konesi	2. karaisikaro	3. vasikaro-inaisie	4. nasikare nasikare	5. nararanaisi	10. *arimai*, paromaru, mara-maraisi-karu
	6. *namai*	7. nimai	8. darimai	9. danimai		
„ (2) ...	1. unium	2. karaala	3. naralavievi-napuevi	4. naralavievi-naralavievi	5. naralavievi-naralavievi *napuevi*	10. kowa
						20. kowakowa
Oru Lopiko ...	1. konepu	2. kalotolo	3. konekhalavi	(mamutara *many*, onionipu *few*.)		
Afoa	1. kòne	2. atolowai	3. atolowai-atima	4. atolowai-atolowai	5. atolowai atolowai atima	
Tauata	1. kone	2. atolo (ai)	3. atoloai-laina	(Talele: memene *many*, konelone *few*)		
Ambo	1. kone	2. atoruamai	3. atoruei-isima			
Deba	1. kone	2. ataurui	3. ataloinsima	4. autolo-iu-autolo	5. kalatorope	10. *kalatorope*
Goilala (1) ..	1. kone, amoto	2. tutubu, kuparie	3. komutoi	4. komuai, kunikunai	5. ai io	10. amo gonai
	6. tiio-amoto	7. aiio-tutubu	8. aiio-komutoi	9. aiio-komuai		
„ (2) ..	1. guneyi	2. *kuparie*	3. *kumutai*	4. kunikunai	5. anu-kunai	10. anu-guna
	6. karau-tui	7. kupapi-ai	8. barigumai	9. kumutai-guna		
„ (3) ...	1. mu	2. warima	3. guparitevi			
Fuyuge	1. fida (ne)	2. gegeto	3. gegeto-m'inda	(gegeto = *few*, tale(le) = *many*)		
Agita	1. fidau	2. ruala	3. iwaliminda	4. baita	5. amaru	
Gagara	1. iawaro	2. mindana	3. wani	4. hmi	5. variwana	10. haru
Sikube	1. fidana	2. iuara	3. iuara-minda			
Kabana	1. igana	2. abui	3. abu-igana	(Cf. *Koiari languages.*)		
Kambesi ..	1. pidasa	2. ruara	3. iowarami-nda			
Koroba	1. fida (ne)	2. gegeda	3. gegeda-fidane			
Neueba	1. *forerederabaru*	2. *ataradarabaru*	3. *same as* 1	4. *same as* 2		
Kotoi	1. igai	2. abuti	3. abuti-gai	4. abuti abuti	5. mutaki	10. mutaki
Gosisi	1. adai, mamu	2. nokaia, totaimanu	3. nukaive, kemanu	3. *fisove, totakemanu*	5. *mburive, mrima*, totatikemanu	10. yahamu, abaruhama
Suku	1. igai	2. abute	3. abute-igai	4. abuti-abuti	5. abuti-abuti-igai	10. mutaki *many*

Uabaru	1. igai	2. abuti	3. abuti-igaita	4. abui-abui	5. avave	10. avave-baita	
Wowonga ...	1. igai	2. abui	3. abuita-gaita	4. moaga	5. avabe	—	
Biagi	1. igari	2. abui	3. abuita-gaita	4. moaga	5. avabe	—	
Isurava	1. ikari	2. abuti	3. abuti-ikari	4. abuti-abuti	5. abuti-abuti-ikari	—	
Karukaru ..	1. igali	2. abuti	3. abuti-teigalita	4. minama-levilevi	5. baita	10. adabokuai	
	6. adaueliakikini	7. adawolu-abutita	8. adawolo-wosialo	9. adaviso-lelotilo	—	—	
Iworo	1. ata	2. abuti	3. igari	—	—	—	
Kagi	1. igai	2. abuti	3. abuti	4. abuti-iaaita	5. moaga	10. adamori	
Hagari	1. igae	2. abui	3. abute	—	—	—	
Uamai	1. egai	2. abui	3. abui-tas-igaita	4. abuti-abuti	5. adamori	10. moaga-moaga	
Itu	1. igane	2. abui	3. abui-ganea	4. adavai-mori	5. adamori	10. obobove 20. adamori-veromori	
Meroka	1. igane	2. abu	—	—	—	—	
Uberi	1. igane-gane	2. abui	3. abuia-igane	4. abua-abuia	5. abuia-abuia-igane	—	
Koita	1. kobua	2. abu, abugu	3. abigaga	4. abaabu	5. ada-kasiva	—	
	6. agorokiva	7. atirigava	8. abuguveiti	9. igaguveiti	10. utube	20. uta-abu 100. tmaube	
Konari	1. igau	2. abuti	3. abuti-igau	1. abuti-abuti	5. abuti-abuti-igau	10. obua = *all*	
Sogeri	1. igau, (igane)	2. abute, (abuia)	3. abuti-a-igau, (abuia-igam)	4. (obobova)	5. (adavaimore)	10. (adavai-more-ada-vaimore)	
Iarumu	1. igau	2. abuti	3. abuti-gati	1. abuti-ta-abuti	5. adafakibi	—	
	6. fakibi igau	7. adahakibi-abuti	8. adahaki-fakibe-abuti-ta-abuti	9. adafaki-befaki-beka-bebo-mego	*Same as* 9.		
Eikiu	1. igau	2. abuti	—	—	—	—	
Manari	1. igau	2. abuti	—	—	—	—	
Favele	1. igane	2. abuti	—	—	—	—	
Mulaha	1. seboke	2. ebaine	3. uakmi	4. ebainebaine	5. ebainebaine-seboke	10. udeke = *all*	
Iaibu	1. pebogi	2. ebamani	—	—	—	udegi = *all*	
Garia	1. tepo	2. aheu	3. igitu	4. gajaga	5. fua	10. gabana	
	6. fua-tepo	7. fua-aheu	—	—	—	20. oda-gabana-nana	

Papuan Numerals—continued.

Lakunai	1. *tepo*, (*tebo*) 6. (naia-tebo)	2. aheu 7. (naividu)	3. ivetu (ividu) 8. (evorinai-aheu-aheu)	4. ahujuahu, (aheu-aheu) 9. (nau airuruni)	5. *etc.*, wutuna 5. (evorimoi)	(10. arota)
Kwale	1. tiba 6. tiba-fale	2. aheu 7. tiba-fale-aheu	3. ugitu 8. tiba-fale-ugitu	4. gazjaga 9. tiba-fale-gazjaga	5. fu'o	10. gabanana 20. gabana-aheu
Mamukolu ...	1. teebu	2. aheu	—	—		—
Kokila (2) ...	1. yokoi-maka 6. orofai-yokoi	2. iema —	3. legodi —	4. yanalaro —	5. orofai	10. beubeuana 20. yofori-maka-yofori-maka
Orai iu	1. aifoi 6. anai-ebelu-aifoi	2. iema 7. anai-ebelu-iema	3. iie-abu 8. anai-ebelu-iie-abu	4. ebe-iema 9. anai-ebelu-ebe-iema	5. anai-ebelu –	10. anai-ebelu-anai-ebelu
Seramina ...	1. ogono 6. ahebesi	2. inoihi 7. beso-orofo	3. inobita 8. orofo-inobita	4. foata 9. orofo-ogono	5. *irogora* —	10. egai-maforo 20. eagi maforo eagi-maforo
Barau	1. *ugonu-mana*	2. inoi	3. inoi-ugonu	4. inoio-inono	5. inoi-bideri	10. hoita *mang* 20. hoita
Nigubaiba ...	1. ogono	2. inoi	3. inioi-ogono	4. ilaugora	5. ilau-gora	10. ilaugorau-ilaugora 20. ilaugorau ilaugorau-deogora-deogora
Mogoni	1. uun	2. inoapi	3. inoapi-bio	4. boapa	5. iunu	

Melanesian Vocabulary.

	1. Areca-nut.	2. Banana. ([1] Tree. [2] Fruit.)	3. Bird.	4. Coconut. ([1] Tree. [2] Mature fruit.)	5. Dog.
Mekeo ...	mave	oo, aiva, iñia	inei	kongas	amue
Rapeka ...	muba	kaukai	inesi	daudina	opeka
Kuni ...	iluba	ko	—	doa	oiame, obeka
Roro... ...	raurau	u'una[1], warupi[2]	roborobo	tona	waiha
Waima ...	—	akaea[1], uarupi[2]	rovorovo	tona[1], kilikilo[2]	uaeha
Pokau ...	buakau	dui[1], ko'o[2]	manu	niu[2]	oveka
Kabadi ...	uakauna	koroi[1], lamana[2]	manu	niuna	oveka
Doura ...	mame	ani	manu	niu	sisia
Motu ...	buatau	dui[1], bigu[2]	manu	niu	sisia
Sinaungolo ...	bua	ngani	manu	niu	kwaiawa
Ikoro ...	guria	galivata	manu	niu	gagalu
Hula... ...	guria, raurau, kiiri	pukave[1], hani[2] luku	manu	niu	kwaea
Keapara ...	koki	pukave[1], hani[2]	manu	niu	waeha
Rubi... ...	botau	aga	manu	doa	kwagu
Galoma ...	—	pagava[1], gabua[2]	manu	niu	waga
Keakalo ...	—	—	—	egala	—
Aione ...	avuka	—	kana	—	kawa

	6. Ear.	7. Eye.	8. Fire.	9. Fish.	10. Foot[1], Leg[2].
Mekeo ...	aina	ma'a	lo	ma'a	we
Rapeka ...	kaia	maka	hanova	maka	ai-pala-poana[1]
Kuni ...	kaia	maka	aloba	muke	ae[1,2]
Roro... ...	haia	maha	iruba	maia, maiya	ae[1,2]
Waima ...	haia	maha	iruva	maia	ae-panava[1], ae[2]
Pokau ...	kaia	maka	aloba	sisiatu	ae[1,2]
Kabadi ...	kaina	maka	au-araara	veana	ae-panavana[1],
Doura ...	kaia	maka	aloba, aroha	sisi	ae-buana[1], ae-akaka[1], ae-ae-palapala[1], ae[2]
Motu ...	taia	mata	lahi	kwarume	
Sinaungolo ...	senga	mata	kalava, karava	mangani	kwakuna[1,2]
Ikoro ...	sega	mata	kaloa	magani	gaga[1]
Hula... ...	kea	ma	kalova	mani	hage-gunu[1], hage[2]
Keapara ...	eha	ma	alova	mahani	hage-gunupa[1]
Rubi... ...	tega	mata	kava	mani	aga-lepkaa[1]
Galoma ...	ega	ma	alova	manuni	gage[1]
Keakalo ...	—	—	—	—	gage-roua[1]
Aione ...	—	—	karoa	mani	ae[2]

Melanesian Vocabulary—continued.

	11. Hand[1]. Arm[2].	12. House.	13. Man. ([1] Vir. [2] Homo.)	14. Moon.	15. Pig.
Mekeo ...	ima[1,2]	e'a	papiau, au	ngava	uma
Rapeka ...	ima-buga[2]	numa	kau	bwila	ponoma
Kuni ...	ima[1,2]	luma, kufu	kau	bwiya	boloma
Roro... ...	ima[1,2]	izu, marea	hau	naua	aiporo
Waima ...	ima[1,2]	itu, marea	hau[1]. maea-rima[2]	naoa	aiporo
Pokau ...	ima[1,2]	l'oe, luma	kau	vuia. vula	boloma
Kabadi ...	ima[1,2]	ruma, ro'e	kau	uena	boroma
Doura ...	ima palapa-lana[1]. ima[2]	ruma	kau	huia	boroma
Motu ...	ima palapala[1], ima[2]	ruma, dubu	tau[1], tauni-manima[2]	hua	boroma
Sinaungolo ...	gima lefale-fana[1], gima[2]	numa	tau	guve, ueva	bai
Ikoro ...	gima paga-paga[1], gima[2]	numa	tau	hue	pae
Hula... ...	gima[1,2]	numa	au	bue	pae
Keapara ...	gima[1,2]	numa, lubu	au[1]. auni lima-lima[2]	bue	pae
Rubi... ...	ima[1,2]	uma	tau	wui	baa
Galoma ...	ima[2]	numa, rubu	au[1]. aunilima-lima[2]	bue	pae
Keakalo ...	ima[1]	—	—	—	—
Aione ...	ima[1]	numa	marawari	ul	baha

	16. Stone.	17. Sun.	18. Tooth.	19. Water.	20. Woman.
Mekeo ...	fopa. fau. kepa	kina	ni'e, ñeme	vei	papie, onge
Rapeka ...	—	dia	ike	vei	vabie
Kuni ...	debo	dia	ike	vei	wabie
Roro... ...	pitara	beraura	nite	bei	babine. one
Waima ...	pihara	veraura	nihe	vei	vavine
Pokau ...	bika'a	melala	nike	vei	a'ate
Kabadi ...	vakuna	akona	nise	veina	vavine
Doura ...	ruala. uara	dina	ike	vei	ateate. atate
Motu ...	nadi	dina	hise	ranu	hahine
Sinaungolo ...	pole. fore	ngalo	donga	nanu	vavine
Ikoro ...	vataga	garo	doga	nanu	vavine
Hula... ...	vau	aro	rua	nanu	vavine. babine
Keapara ...	vau	haro	rua	nanu	vavine
Rubi... ...	poali	aru	dòga	nanu	gaine
Galoma ...	bau	garo	rua	nalu	babine
Keakalo ...	—	—	—	—	—
Aione ...	adi	aro	—	nunu	enekapuna

Papuan Vocabulary (1).

	1. Areca-nut.	2. Banana.	3. Bird.	4. Coconut.	5. Dog.
Ashavi... ...	tibimaki	namgumga	hingo	iyoga	hivea
Madinava ...	paga	naga	iga (inga)	—	hivega
Williams River	bunga	yia	—	—	—
Kunimaipa ...	—	eri	ideb	—	kade
Sini	banga (?)	eri	indegep	—	—
Biaru	—	teri, teli	idep	—	gadep
Goiefu	ve	teri	ediropu	—	katamara
Kuepa	—	—	edaipu	—	—
Kovio (1) ...	koveo	teri	ıdĕp	teri	gadĕp
„ (2) ...	veiyu	teri	edepu	niu	kadepu
Oro Lopiko ...	auliri-koyo	teli	iti	—	kate (fu)

	6. Ear.	7. Eye.	8. Fire.	9. Fish.	10. Foot[1]. Leg[2].
Ashavi... ...	kata	hingu	tuwa-am	—	hiuga[1], huavo[2]
Madinava ...	kada	higo, hingu	da, (ihecha)	vaiboga	haua[1], kohe[1], (kogema[1])
Williams River	geralibu	ıdi	—	—	ingum[1]
Kunimaipa ...	—	etau	—	—	engarop[1]
Sini	karab	numa	ijuis	—	—
Biaru	—	ita-kawaru	izaridi	rapiamala	alili[2]
Goiefu	gatowe	etahu	itamti	—	kulipop[1], onai[2]
Kuepa	gatagapu	itau	etimeda	garilapu	madautz[1], apauta[2]
Kovio (1) ..	katole	itakwaru	iziradi	rapiamala	inatiporotoi[1]
„ (2) ..	atakaposi	etau	itmade	kaperapu	—
Oro Lopiko ...	katakapota	itau	iti	kavila	teporosi[1], inako[2]

Papuan Vocabulary (1)—continued.

	11. Hand[1], Arm[2].	12. Head.	13. Mouth.	14. Nose.	15. Eye.
Ashavi ...	Kagimi-geai[1], lehea[2]	anyah	—	kaamia	vaiso
Madinava ...	hegai[1-2], (mabung[2])	agau, anga	amacha	kaina	avea, (vawera)
Williams River	mogu[1-2]	—	—	—	—
Kunimaipa ...	malaro[1]	tufumagi, zhemagi	abumaio	gnomi	gozop
Suau ...	mororzh	tufumagi, kamagi	ambobo	gnomia	boz
Biaru	malaka-punatch[1]	tupumagi, anakave	kalawitoro	nonitch	woromala
Goiefu	malakuriop[1]	tufumakia, jemaiki	abukoimara	onea	gozop
Kuepa	malatipulotsi[1], malau[2]	damaki	abukoimala	nonisz	—
Kovio (1) ...	malaka-punatch[1], malau[2]	tupumagi	kalauotoro	nonitch	woromala
,, (2) ...	murakorosi[1], malau[2]	yemagi	abopu	oneau	welopu
Oro Logiko ...	mala-tu-porotsi[1], malao[2]	dubumaki, dema(ki)	abo(te), mala	onea, nonitsi	voro (mala)

	16. Stone.	17. Sun.	18. Tooth.	19. Water.	20. Woman.
Ashavi	hauwo	mabaea	mangya	eha	—
Madinava ...	haua	maboa	manga	ega, (echa)	avache
Williams River	ghin	—	ko	hi	—
Kunimaipa ...	gelio	gitap	gitafavi	—	angap
Suau ...	kaliaro	gadep	kera	—	angopi
Biaru	geleo	stamari	kitira	—	anakave
Goiefu	kelio	kitaub	gitagai	—	anamali
Kuepa	gele	gaitamuh	kedets	evato	anamala
Kovio (1) ...	geleo	stamari	kitira	eweo	anakave
,, (2) ...	keliu	kaitaita	kitikai	eveu	anapu
Oro Logiko ...	kile	kita	ritetsi	eveo, evori	anatemala

Papuan Vocabulary (2).

	1. Areca-nut.	2. Banana.	3. Bird.	4. Coconut.	5. Dog.
Aroa ...	iluve	pelai	kila	—	kovela
Fauata ...	vonuve	pelei	kile	—	kovela
Kambo ...	uruvei	pelei	kile	koromuve	kovela
Keiba ...	—	—	kila	—	—
Koilala (1) ...	uruwai	perai	wile	goromuta	kovera
,, (2) ...	—	perai	kida	—	covira
,, (3) ..	—	perai	ure	—	kovero
Adyage ...	kese	ambe	nembe	fofo(ne)	oye
Dnunge ...	—	amba	nemba	—	oil
Agita ..	sibo	amba	nemba	ba	ho
Bagara .	—	hambo	—	bau	huo
Kaube	—	asi	nembe	—	hu, fu
Komaii ..	—	hambi	nebe	—	hu
Tauada ...	—	amba	nemba	—	hu
Kabana .	—	habe	tubureda	fofona	hoa
Vovoi ..	—	habi	nembe	—	hu
Kambisa .	kesi	—	neba	bao	hu
Kambesi .	—	—	nemba	—	—
Korona ...	soroma	haba	nebe	fofo	ho
Veneba ...	bodi, sibo	maina, uve	nea	beneba	to
Kotoi ...	—	—	ngu	—	—
Gosisi ..	.	uve	—	—	to
Suku ...	—	ufe	—	—	to
Gabari ...	—	—	ugu	—	—
Wowonga ...	vara	uve	ngu	ba	tô
Biagi ...	sibo	uve, (uwe, maina)	ngu	ba	tô, (do)
Asurava ..	tsibo	huve	ugu	ba	dô
Karukaru ...	—	—	ugu	—	—
Iworo ..	—	sabari	—	—	—
Kagi .	(meata)	(uwe)	ugu	(baga)	(to)
Hagari ...	—	uvi	ugu	—	to
Wamai ..	—	—	ngu	.	—
Itu	—	—	ugu	. .	—

Papuan Vocabulary (2)—continued.

	6. Ear.	7. Eye.	8. Fire.	9. Fish.	10. Foot[1], Leg[2].
Afoa ...	kepapi	tabe	enami	gapila	lomineti[1]
Tauata ...	kepape	vape	ena(me)	kapila	lo(pe)[1], kemame[2]
Ambo ...	kepape	tape	ename	kapila	motalepe[1], keniape[2]
Deba ...	kepape	tape	wename	kapila	kesili-hvineta, kesiapa[2]
Goilala (1) ...	kepapa	tavei	enamo	kumota	motapa[1], lovo[2]
,, (2) ..	kepapa	tava	enama	—	motapa[1], lobo[2]
,, (3) ...	gepapa	tavi	enami	—	motaupu[1], poratata[2]
Fuyuge ...	iangolo(me)	i(me)	ôki(de)	garume	yovali[1-2], soge[1-2]
Onunge	yangulu	imu	—	—	fudu[1], muda[2]
Agita ..	gadoron	odoro	oki	garume	tobo[1]
Gagara ...	dadoro	imo	—	garumo	sogo[1], mudo[2]
Sikube ...	gaderu	ima	okia	—	suku-tobu[1]
Gomalı ...	gadulumu	imu	—	—	fudu[1], muda[2]
Tauada ...	gadulu	imu	—	—	suga[1], muda[2]
Kabana ...	gadero	emurese	okia	mada	suge[1]
Vovoi .	gadolo	ima	—	—	sugutobo[1], mude[2]
Kambisa ...	gadaro	ing	uki	garung	suga[1]
Kambesi ..	gadoro	im	oki	garumi	soga-sina[1], sula-
Korona ...	ı	yago	oke	unuma(?)	sogo[1]
Neneba ...	goriba	di	lele	—	fasi[2]
Kotoi ...	ufana	ni	vene	seava	pelo-ufiso[1], pelo-
Gosisi ..	kuvana	ni-abai	vene, fene	—	pata-gova[1]
Suku ...	ufana	ni	vene	—	vata-gova[1]
Uabari ...	uvana	nı	vene	seava	pelo-oka[1], pelo-
Wowonga ...	golema	walı	veni	seava	gena-wôtô[1]
Biagı ...	golema	walı. (ni)	veni	seava	gena-wôtô[1], (fasi-woto)[2], (fasi)[2]
Isurava ...	korema	ni	feni	emingo	gena[1-2]
Karukaru ...	golema	lı	idı	sivi	fasi-nama[1], fasi-kati[2]
Iworo ...	—	ni	viena, lele	—	geina[1], geina-utavi[2]
Kagi ...	gorema	ni	vene	uiena	genaviso[1], gena[2], (velo)[1]
Hagari ...	gorema	ni	vene	mesia	gina[1], vevoto[1], idi-evana[2]
Wamai ...	gorema	ni	vene	uiena	velo-ivio[1], velo[2]
Itu	gorema	ni-ebai	vene	uiena	va-ogava[1], velo[2]

Papuan Vocabulary (2)—continued.

	11. Hand[1]. Arm[2].	12. House.	13. Man.	14. Moon.	15. Pig.
Afoa ...	galatoputé[1], kalab[2]	geade	wòle	òni	polu
Tuata ...	kala-opua[1], kala(pe)	kia(te), tumute	vale, mu	one	polu
Ambo ...	karapé[1,2]	kiate	bole	one	poro
Deba ...	kalaulinvineta[1], kalapa[2]	kiate	akowe	one-lakila	—
Goilala (1) ...	kararei[1], karava[2]	kiati	vari	one	poru
,, (2)	kalava[2]	kiata	bari	one	poru
,, (3) ...	garavi[1], garava[2]	tumuti	muteri	uni	poru
Fuyuge ...	bodo(le)	e(me)	ane	one	ovo(le)
Onunge ...	yale[1], yal[2]	emo	anu	one	ovole
Azita ...	iyara[2]	au	ana	hama	owo
Gagara ...	iaro[2]	emu	ano	—	owuro
Sikube ...	iara	—	inuga	—	obu
Gomali ...	yakana[1], ya[2]	ie	anu	hama	uwu
Tauada ...	yalusin[1], ya[2]	emo	anu	hama	uwu
Kabana ...	iaruse	ema	a	hama	—
Vovoi ...	yarisi[1], ya[2]	emuna	anu	hama	owolo
Kambisa ...	ia[1,2]	—	—	hama	sika
Kambesi ...	ia[1], kwasa[2]	e	amuri	hama	—
Korona ...	yaro'uba[1], ya[2]	e	a	hòna	o'o
Neneba ...	ada[1], ada-itawa[2]	laga	ana	aige	torea, owi
Kotoi ...	ada-viso[1], ada[2]	o	tahote	bata	—
Gosisi ...	ada[1]	—	ana	—	toreka
Suku ...	ada[1]	—	ata	—	ofo
Uabari ...	ada-itoto[1], ada[2]	o	ata	bata	—
Wowonga ...	ada-baluga[1]	kade	ata	bata	owo
Biagi ..	ada-baluga[1], (ade-inama)[1]	ô (laga)	ato	bata	owo
Isurava ...	ata	ô	ata	bata	owo
Karukaru .	ada-iluwu[1], ada[2]	laga	atana	bata	owo
Iworo ...	ada[1], ada-tava[2]	laga	ana, noro	—	—
Kagi ...	ada-visa[1], ada[2]	o, laga	ata	bata	(obo)
Hagari ...	ada[1,2]	oerogo, oko	ata	—	ovo, owo
Wamai ...	ada-ivio[1], ada[2]	o	maraga	bata	—
Itu	ada-ivio[1], ada[2]	iaga	maraga	baa	—

Papuan Vocabularies—continued.

	15. Sun.	17. Sky.	18. Earth.	19. Water.	20. Woman.
Afo	... [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tanata	... [illegible]	[illegible]	[illegible]-ape	[illegible]	[illegible]
Amboo	... [illegible]	[illegible]	[illegible]-ape	[illegible]	[illegible]
Dyabo	... [illegible]	[illegible]	[illegible]-ape	[illegible]	[illegible]
Gohala (1)	... [illegible]	[illegible]	[illegible]-oma	[illegible]	[illegible]
,, (2)	... [illegible]	[illegible]	[illegible]-oma	[illegible]	[illegible]
,, (3)	... [illegible]	[illegible]	[illegible]-oma	[illegible]	[illegible]
Fuyuge	... [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Omaufe	... [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aseki	... [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gogara	... [illegible]	—	[illegible]	[illegible]	[illegible]
Sikuli	—	—	[illegible]	[illegible]	[illegible]
Gomali	... [illegible]	[illegible]	—	[illegible]	[illegible]
Tauala	... [illegible]	[illegible]	—	[illegible]	[illegible]
Kobana	... [illegible]	—	[illegible]	[illegible]	[illegible]
Vovoi	... [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Kambisa	... [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Kambesi	... [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Korona	... [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nenebo	... pura, fure	kari	aibai, anagi, sisa	ei	—
Koroi	... mune	uani	ai-iluvu	ebido	[illegible]
Gosisi	... muni	famemi	aieyu, ovedai	[illegible]	[illegible]
Suku	... muni	vani	ai, arigo	[illegible]	[illegible]
Vaburi	... mune	fani	ai-iluvu	[illegible]	[illegible]
Wowonga	... muni	wani	lowu	[illegible]	[illegible]
Biagi	... uri (hule)	wani, (wali)	lowu	[illegible]	[illegible] (kaute)
Isuruva	... fure	fani	kauta	[illegible]	[illegible]
Ikorakaru	... hule	tali	aibai	ei	[illegible]
Iworo	... furi	—	aibia, (ai)	ei, inau	—
Kazi	... mune	vani, (wani)	luguvi	[illegible]	[illegible], mugu
Magari	... muni	vani	ai	[illegible]	—
Wamira	... mune	vani	ei	[illegible]	[illegible]
Ira	... mune	vani	ai	[illegible]	[illegible]

Papuan Vocabulary (3).

	1. Areca-nut.	2. Banana.	3. Bird.	4. Coconut.	5. Dog.
Meroka ...	—	uvi	ugu	paγa	o
Uberi ...	vaga	uvu (uvi)	ugu	paga (paγa)	o
Ebe	—	—	—	—	—
Koita ...	faga	uhi	ugu	baγa, karu	totoka
Koiari ...	faga	ufi	ugu	baγa, karu	totoka, to
Sogeri ..		uhi	ugu	—	to
Tarumi ...	—	—	ugure	—	—
Eikiri ...	—	ufi	ugu	baγa	dodoka
Maiari ...	—	ui	uku	baa	do
Favele ...	—	uhi	ugu	paγa	do
Mulaha ...	—	vatuna	ireva	uba	ona
Taibu ...	bena	—	teboari	kaugi	—
Garia ...	veni	aijo	mani	wuni	goni
Lakumi ...	veni	hajo	neni	wuni	woni
Kwale ...	vini	hazjo	nini	gune	nguni
Manukolo ...	—	haio	neni	γune	γone
Kokila (1) ...	garu	mumo	—	pali	—
,, (2) ...	ima	namo	erena	mava	auna
Orai-iu ...	—	—	edena	—	—
Gebi ...	oi-anu	waga-boda	eerma	moana	auna
Seramina ...	seru	mumo	ugu	farai	oa
Barai ...	—	—	ugu	—	—
Nigubaiba ...	—	—	ugu	—	—
Mogoni ...	—	—	uu	—	—

Papuan Vocabulary (3)—continued.

	6. Ear.	7. Eye.	8. Fire.	9. Fish.	10. Foot[1]. Leg[2].
Meroka ...	kerema	ni	vene	mesia	velo[1]
Uberi ...	korema	ni-ebai	vene	guiena, (mesia)	(velo)
Ebe ...	korema	ni-abai	—	—	wòro
Koita ...	ihiko	ni	veni	karava	vasi-fotoka[1]. vasi[2]
Koiari ...	iñko	ni	vene	karava	wasi-fotoka[1]. wasi[2]
Sogeri ...	ihiko, (korema)	ni, (ni-ebai)	vene	mesia. (uiena)	wata[1]. vahi-. (vereva-kava[1], vigu-[2])
Tarumi ...	iko	ni	vene	meusa	uanaderi[1]. barobutiwa[2]
Eikuri ...	ipiko	ni	veni	mesia	vasi[1]
Maiari ...	iika	ni	vene	nepuia	vahi[1]
Favele ...	ihiko	ni	vene	mehuia	vahi
Mulaha ...	aku, akube	iabae	ova	baida	koi[1]
Taibu ...	akuru	boivi	boareki	baita	koina-iapai[1]. koina[2]
Garia ...	tega	ubuna-sinia	meroka	mani-kone	mai-lapa[1]
Lakumi ...	abi	ubuma	ile-susuva, (ire)	haroni, (uoioni)	odo-lafavai[1]. (mania[2])
Kwale ...	tegaga	ubumaga	ile-loga	gozjone	odaga[1]
Manukolo ...	abi	ubuma	ile	maita	oda[1]
Kokila (1) ...	—	—	manu	uhouno	—
,, (2) ...	anena	ne	ita	oiena	uka-rapu[1]
Orai-iu ...	anema	ne-una	isa	oluali	onea-helabi[1]. onea[2]
Gebi ...	anema	ne-una	ita	oi-ena	iuka-lako[1], iuka[2]
Seramina ...	gada	nepo	menu	uyono	dahu-gomu[1]
Barai ...	gada	niho	menu	huionu	deu[1]. mabi[2]
Nigubaiba ...	gada	nipo	meko	uiono	deu-patoga[1] dua[2]
Mogoni ...	eda	niho	mienu	ijunu	dio-sue[1]. di-

Papuan Vocabulary (3)—continued.

	11. Hand[1]. Arm[2].	12. House.	13. Man.	14. Moon.	15. Pig.
Meroka ...	ada[1]	iaga	ata	bāu	—
Uberi ...	ada[2]	iaga-evana	aa, (aau)	paa, (paau)	ovo
Ebe	ada[1]	—	aha	—	—
Koita ...	ada[1·2], ada-hura[1]	yaga	ata, koita	bata	oho
Koiari ...	ada[1·2], ada-hoto[1]	yaga	ata	bata	ofo
Sogeri ...	ada[1·2], (ada-visa[1], ada[2])	iaga	(a)	(baa)	oho
Iarumi ...	adabarabara-waro[1], adaka[2]	iaga	ata	bata	—
Eikiri ...	ada[1]	iaka	ata	pata	—
Maiari ...	ada[1]	iaga	ata	pata	—
Favele ...	ada[1]	iaka	ata	pata	—
Mulaha ...	dive[1], didia-bara[1]	niva	tapata, goasava	vaesa	—
Iaibu ...	iapai[1], didiva[2]	—	—	—	aba
Garia ...	lapaga[1], evori[2]	ne	ohogi	bato	aba
Lakumi ...	evori-lafavai[1], evori[2]	ne	vagi-fafai, (ohoje)	bato	aba
Kwale ...	evole-lafaga[1], evo'a[2]	ne	vaɣje	bato	aba
Manukolu ...	everi[1]	nehe	vaɣe	patu	—
Kokila (1) ...	—	—	amanaga	wasa	—
.. (2) ...	vana-rapu[1], vana[2]	yava	amia	aeyo	dona
Orai-iu ...	anada-lagabai[1], ana[2]	iawa	lamai-i-iu	eowa	—
Gebi ...	wana-lapu[1], wana[2]	iawa	amie	e-io	dona
Seramina ...	ilau-patagu[1], ilau[2]	garu	eai	vasa	mapu
Barai ...	irao[1], irao-ao[2]	aru	hebaru	uasa	—
Nigubaiba	ilau-uoma[1], irau[2]	garu	e	uasa	—
Mogoni ...	ilasu-e[2], irau[2]	aro	ebau	wasa	—

Papuan Vocabulary (3)—continued.

	16. Stone.	17. Sun.	18. Tooth.	19. Water.	20. Woman.
Meroka ...	muni	vani	ai	e	magi
Uberi ...	munii	vani	ai	ee	magina, (maγina)
Ebe	mune	wali	ai	e	magina
Koita ...	muni	vani	egi	eē	magi
Koiari ...	muni	vani	egi	eita	magi
Sogeri ...	muni	vani	egi, ei	(e)	magi, (magina)
Iarumi ...	mum	vani	e	eta	ma
Eikiri ...	mum	vani	eγi	eita	maγi
Maiari ...	muni	vani	gi	ita	mai
Favele ...	muni	nini	eγi	eita	magi
Mulaha ...	haropa	pava	vāi	vara	sina
Iaibu ...	aroba	bauwa	waina	—	tina
Garia ...	oroho	mada	gononi	wu	rogai
Lakumi ...	adi	mada	vononi	wo, (vou)	nooni
Kwale ...	hadi	mada	gonoga	vwu	nogone
Manukolu ...	hadi	—	onone	eo	none
Kokila (1) ...	umare	—	—	eido	balano
.. (2) ...	tori	meda	gadi	ko	lema
Orai-iu ...	baga	masa	gade	oru	owe
Gebi ...	waiga	neda	gadi	oru	lema
Seramina ...	umari	ayono	gubai	itoa	maina
Barai ...	munu	aionu	gubai	ido	emaina
Nigubaiba ...	umari	aionu	gubai	ido	maina
Mogoni ...	munu	we	obai	idoi	imain

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AMONG SOME UNKNOWN TRIBES OF SOUTH ARABIA.

[With Plates V–X.]

By Bertram Thomas.

From a point of view of exploration, South Arabia is divided by the line of longitude 55° E. What little exploration has been done by Europeans is to be placed west of that line. Eastwards no European has at any time before penetrated the hinterland (except for a small journey made in the Ja'alan by Lieutenant Wellstead more than a hundred years ago). South-Eastern Arabia has thus remained *terra incognita* and its map a blank. Commercial intercourse with South Arabia, chiefly in connection with frankincense, was carried on probably by the Greeks, and, certainly later by the Romans, and this led to a knowledge of local geography which has been preserved for us by Ptolemy, Pliny, Dionysius, and others, but that intercourse was of necessity confined to the western half of the south coast, and we turn in vain to the classical geographers for any considerable light on the eastern half of the southern littoral. The Arab geographers add little, and that, except for Ibn Batuta when he speaks of Dhufar, on the evidence of others. The truth would seem to be that sterility and barbarism, the two chief characteristics of the south-eastern borderlands of Ruba al Khali, have throughout the ages been prohibitive alike to Europeans and to Arabs.

In January and February of 1928 I accomplished a journey through country in which no European had previously set foot. Fifteen camels and an escort of twelve Arabs (a changing personnel except for three guides[1]) constituted my caravan, and the journey of 650 miles from Suwaih to Dhufar occupied forty-eight days. This included two halts, one of seven days at Khaluf and the other of three days at the entrance of Wadi 'Ainain made for the purpose of changing camels, and this, in effect, divided the journey into three approximately equal stages.

I should say at the outset that I travelled under no Government auspices—in fact, no auspices but my own, and the success of the journey depended upon my living as a Badu and mixing freely with the natives and being passed from Shaikh to Shaikh. It is country that owes allegiance to no government, and where every man goes armed, and three times my innocent caravan came under hostile fire for no better reason than that we were mistaken for raiders with whom it would be suicidal to do other than shoot first and enquire afterwards.

[1] *See* Pl. V, Fig. 1.

Space does not allow of a narrative of the whole of my journey, and I propose here to limit myself to a description of a previously unknown group of tribes (except for the Dhufar elements), occupying a part of the second and the whole of the third stage of the journey, their customs and dialects, and the archæological remains found in their habitat.

The area in question stretches from Wadi Sarab (lat. 20° 10′, long. 57° 45′ E.) to Salala, the capital of Dhufar (lat. 17° 00′, long. 54° 6′ E.). This region forms the habitat of a group of five tribes, which it would appear are racially distinct from the Semitic Arab, and perhaps from one another, and they speak four separate dialects which are not understood by Arabs, and which have closer affinities with Ethiopic than with Arabic. The names of these tribes in the order in which I passed through them from east to west are Harasīs, Bautāhara Mahra, Qara and Shahara, and, judging from their appearance, traditions and customs, I think there can be little doubt that they constitute a block of non-Arab tribes of great local antiquity: and I further assume, in the light of the facts which I shall set forth, certainly as regards the last-named four, that they are Hamitic. It would thus seem that their ethnological and linguistic affinities are at variance.

Before I describe these tribes in particular I should point out that there are two hostile political factions, Hināwi and Ghāfari, to one or other of which every tribe in South-East Arabia, including these tribes, owes allegiance. Superficially the terms Hināwi and Ghāfari would appear to date from a dynastic squabble over succession in Oman in the early eighteenth century: but, as I have observed elsewhere, they are of much deeper significance, for, generally speaking, the Hināwi label coincides with the tribes of avowed Qahtani descent and the Ghāfari label with those of Maadic or Nizari origin, and all other non-Yamani stock. Within limits, therefore, the division is in origin racial. It is not surprising then that this group should claim to be Ghāfari, except for the Harasīs, who, moreover, acknowledge their defection in times past to the Hināwi party through political expediency. Throughout Oman and South-East Arabia this Hināwi-Ghāfari feud still smoulders, and no man dare travel through country used by a tribe belonging to the rival faction without a *rafīq*.[1] To do so would be to court attack and capture of his camels, if not his own death, except during the brief and intermittent period of truce. To pass safely through a tribe it is not always essential to have as *rafīq* a member of that particular tribe, though that is preferable, but it is essential that a *rafīq* should be taken of that political faction, Hināwi or Ghāfari, to which the tribe belongs. Only amongst the Qara is a slave acceptable as a *rafīq*: elsewhere it is the custom to kill the free man and take captive the slave. In truth it would appear that the slave has a commercial value, and as such shares the privilege of the camel taken in the raid.

[1] Generally a representative of the tribe, whose presence guarantees the traveller and should ensure safe conduct.

The *Harasīs* are a small, dwindling nomad and pastoral tribe, perhaps numbering not more than 200 men, whose habitat is not regarded as their own exclusively, but belongs in name to the western Janaba tribe in the steppe land bordering the desert and extending from the hinterland of Wadi Sarab as far west as the 56th line of longitude. Although clients of the Janaba they belong to the rival political

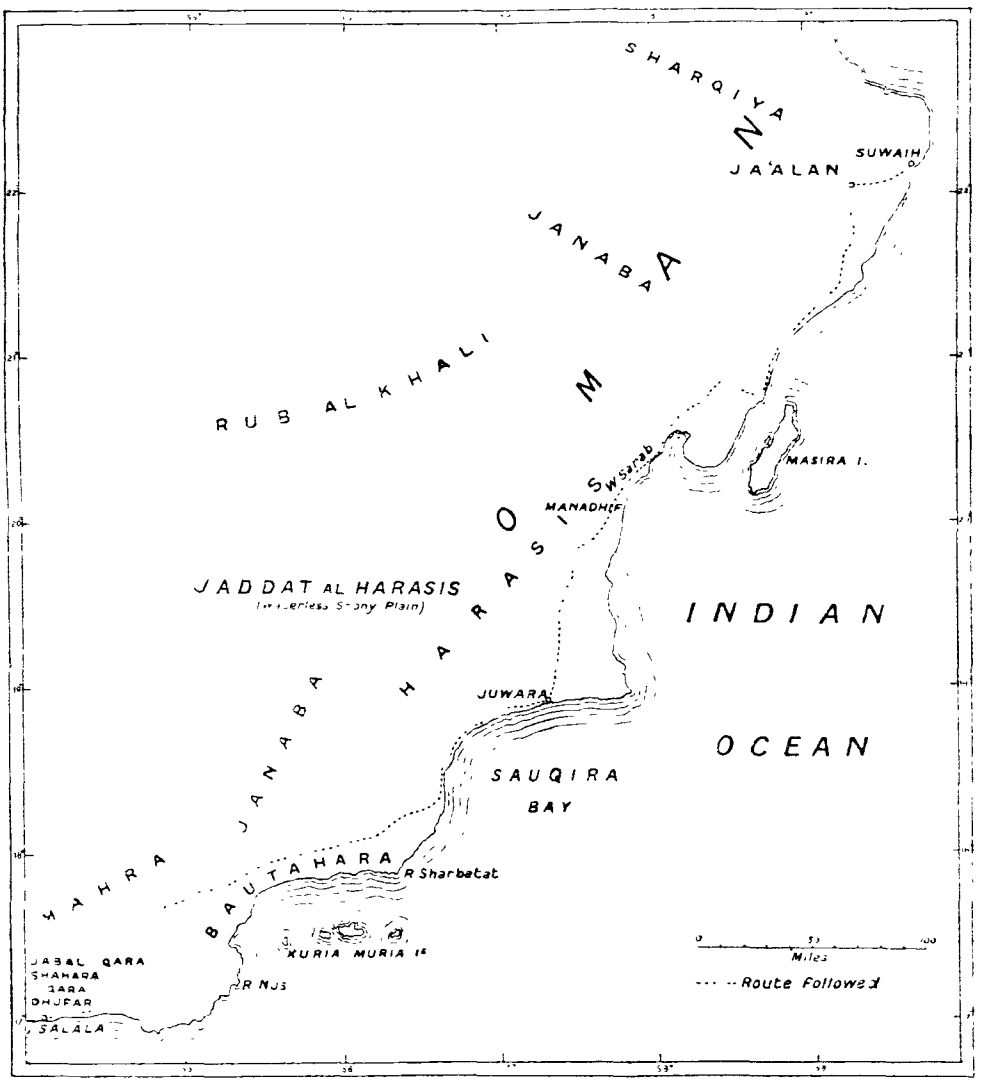


FIG. 1.—SKETCH MAP OF SOUTH ARABIA, SHOWING THE ROUTE FOLLOWED

faction of Hināwi, but pay a nominal *zakat* to the Awamir tribe, by which tribute they are indirectly brought under the ægis of Ibn Saud. Rude and primitive they appeared to me, as distinct from their Hamitic neighbours to the west as from their Arab neighbours to the east. They are, generally speaking, bilingual, though

their Arabic has a slight accent, the noticeable feature of which is a flat " a " sound, suggestive of that vowel-value as met with in Syria, but otherwise having no resemblance to the Syrian Arabic, being a virile Badawin dialect with a rather pleasing inflexion of voice. They have short broad faces, low sloping foreheads and large heavy aquiline noses. The youths, unlike any others I have met, could almost be taken for a type of southern European. A tribe with noble traditions, they are now a scattered collection of seven sections, acknowledging only a nominal hereditary Shaikh, by name Ibn Akīs.

The *Bautāhara* is a still smaller tribe, primarily engaged in shark-fishing, which they carry on in a primitive way, swimming on inflated skins. They have a few camels, and their habitat extends from Ras Sharbatat to Ras Nūs. They are held by their neighbours, with whom they cannot marry, to be of ignoble origin, and until recently were so wild and disreputable that no traveller could pass in safety even accompanied though he might be by a *rafīq*. Ghāfari in politics, the Bautāhara are now subject to the western Janaba. The only Bautāhari I could get hold of, passing as I did on the desert side of their habitat, was a fisherman from the coast. He appeared to be a very low type, though his complexion was comparatively light brown for South-East Arabia ; he had comparatively straight hair and high cheek-bones. A greater local antiquity is allowed to the despised Bautāhara, who were once largely pastoral, than to any other local tribe save the Shahara.

The *Mahra* habitat extends through the desert westward of Jabal Zāūlāūl behind the Qara mountains. Of Ghāfari adherence, the Mahra do not claim descent from a single ancestor as is usual with other tribes ; the eastern element claim descent from one Bīr Bāuki, and the Arabs refer to these Mahri neighbours as Hasarīt. These purely nomadic Mahra had noses which might almost be regarded as European, round brown eyes, short under-lips, jaws wide at the base tapering to pointed chins, and long curly hair. The Mahra exercise suzerainty over a depressed tribe, the Bait Al Hafi, a similar relationship to that subsisting between the Janaba and Bautāhara.

The *Qara* are a numerous settled and prosperous mountain tribe occupying the Jabal Qara and Jabal Samhan, the most prosperous tribe of all the Hamitic group, possessing innumerable camels, herds of cattle, and the richest frankincense country. They resemble the Bisharin tribe of the Nubian desert, to judge from the photographs of the latter. Men of big bone, they have long faces, long narrow jaws, noses of a refined shape, long curly hair and dark brown skins. (Pl. VI, Fig. 2.)

The *Shahara* are a small and disunited tribe living in groups amongst their Qara overlords, for whom they are mere hewers of wood and drawers of water. They have comparatively fair brown skins, less curly hair and more noticeably high cheek-bones. Weak and degraded to-day, they claim to have been possessors of the land before the Qara dispossessed them. (Pl. VI, Fig. 1.)

The entire group, brown in colour, perhaps early Ethiopic in speech, non-Arab and non-negroid in appearance, and occupying almost exclusively the central south of Arabia, have an ancient tradition of a North African origin *via* Hadhramaut—an origin, as regards those of Dhufar, noted by the Arab traveller Ibn Batuta.

These Hamitic tribes have many interesting and perhaps unique customs. The women are not veiled, except in the case of those Badawin elements, *e.g.* Hasarīt and Harasīs, who move amongst Omani tribes. They have a custom of tattooing the chin with a short vertical line with a dot on either side—still practised in modern Egypt (*vide* Lane's *Modern Egyptians*), and I met instances of a bracelet-like design around the wrist. In Dhufar they paint their faces red, black, and green on occasions of religious and other festivals, marriages, circumcisions, etc., generally a line along the edge of the cheek, another under the cheek-bones, and one bridging the nose across the eyebrows. The men are not tattooed. The Qara women of Dhufar have a custom when young and almost invariably before marrying, of having a half-inch strip of hair with its attendant flesh shaved in a centre-parting along the top of the head. The hair never grows again and sometimes the operation has fatal results. Shaving the hair around the forehead to show a large expanse of brow is another observance of feminine beauty. Throughout the whole of these tribes it is customary for a boy's hair to be cut short, except for a strip an inch wide, which is allowed to grow long down the centre of the head—suggestive of a certain Hindu caste, or perhaps of the Horus-lock affected by young Egyptian princes in ancient times in honour of the god. Men either shave the upper lip wholly or leave the slightest suspicion of a moustache not more than an eighth of an inch wide; they shave the side face both downwards from the cheek-bone and upwards from the throat, leaving a slight beard around the edge of the jaw, but they never shave their chin-tuft, though sometimes it is trimmed with scissors. It would be shameful to shave it, for by it a man swears. The growth of face hair is not strong, but the chin-tuft is coarse. Male head hair, characteristically long and curly, particularly with the Mahra and Qara, is generally worn like bobbed hair, and in the case of the Qara it is sometimes bunched up and tied with a bun on top—in both cases generally presenting a greasy appearance from generous treatment with coconut oil. Men go bareheaded, except for a narrow leather thong called a *mahfif*, which is merely a coil wound round the widest part of the head nine times and resembles an Arab *aqal*. Their body-dress consists of a short black shirt to the knees, with a leather girdle around the waist which is looped as a cartridge-belt. They go at all times barefooted and barelegged, except that the Badawin element in summer, when travelling over hot sands, sometimes affects a woollen sock.

Circumcision by these tribes is universal—the boy on approaching adolescence, sometimes after reaching it: the girl on the day of her birth or the second day. This system of adult-male and infant-female circumcision is the reverse of that employed in Oman, where the practice is infant-male circumcision (six years) and

circumcision of the girl when approaching the age of ten. In both regions with the male the whole of the foreskin is removed, but as regards the female, while the Arabs of Oman merely incise the top of the clitoris the Hamitic tribes of the central south perform clitoridectomy. In Dhufar there are sometimes elaborate rites attending male circumcisions, and batches of youths undergo what is a severe public test of their fortitude on the same day. Large numbers of men and women assemble around a large open space. On a rock in the centre sits the boy of fifteen, a sword in hand. This sword, which has been blunted for the occasion, he throws into the air to catch it again in its descent, his palm clasping the naked blade. Before him sits the circumciser, an old man: behind him stands an unveiled virgin, usually a cousin or a sister, also sword in hand. She raises and lowers her sword vertically, and at the bottom of the stroke strikes it quiveringly with the palm of her left hand. The stage is now set. The boy sits, his left hand outstretched palm upwards, waiting for the actual operation. This made, he has promptly to rise bleeding and run round the assembly raising and lowering his sword as if oblivious of pain, the girl running after him. He must complete the circuit three times without being caught by his fair pursuer, and his manliness will be judged by his performance. If he fails, he will be regarded as a weakling. Success is attended by singing, and firing of rifles.

The wife in these tribes may not betray grief on the death of her husband. Mothers, daughters and sisters may weep and raise their voices, and amongst the Qara they let down their hair, beat their heads, and pour dust upon them; but in a wife it is held to be shameful publicly to show pain at the loss of her man, and she hides herself. The Mahri buries his dead without much ado. With the Qara it is a time for wholesale sacrifice, and on the death of a rich man his family will kill as many as ten cows, four or five camels and twenty sheep, the flesh being given to the poor. The cow is held in great esteem, and it is of interest that the virtue of slaughtering it at this time is held to be seven times greater than that of slaughtering a camel, though the camel is intrinsically the more valuable animal of the two. The sacrificial value of the camel and the sheep would appear to be the same. This special reverence for the cow is noticed in the custom governing its milking—it is a male prerogative. The Shaikh of the tribe will milk a cow, but it is held shameful for a woman to touch its udders, though she may water and tend it. Curiously enough, this reverence for the cow by the Hamitic tribes is completely reversed in the neighbouring Arab tribes of Oman. There no man would demean himself to milk a cow; it is an undignified labour, fit only for women. Regarded almost as an unclean animal, the very word for it, *buqara*, is never to be used in polite society. The words chicken and egg suffer from a similar taboo in Oman, where no man would dare in the presence of the Sultan, a Shaikh or 'Alim, mention these things by name. He would probably use *banāt al muedhdhin*, i.e. "daughters of the muezzin," for the former, and *rasās*, i.e. "bullets," for the latter, and the conventional idea

of their vulgarity is shared by the Hamitic tribes. To prepare a lunch of chicken and eggs for a Qara Shaikh would inevitably cause offence.

The burial of a slave in Central South Arabia is attended by much ceremonial, which may conceivably be negroid in origin. A procession of slaves advances singing and playing drums. Men constitute the vanguard, then follow the musicians and corpse, and last of all come the women. Those of the vanguard dance, wearing over their knees a rattle called *khish-khish*, presumably an onomatopœic word. Those in the body of the procession sing, and the responses are taken up by the ladies behind. After the burial everybody, male and female, dances frenziedly around the grave until tired, and the procession retires again with music and dancing, the participants happy in the belief that the departed will now rest unmolested by evil spirits.

A curious method of spirit exorcism and snake-bite cure is practised by certain sections of these tribes, notably the Bait Shaitāna, Bait Qawās and Bait Al Bilhaf. The sick man is laid upon his back. Four of his fellow-tribesmen, two a side, kneel over him. Bending and straightening their backs, so that their faces touch his naked body in turn, they chant, or bark rather, some magic formula, working themselves and their patient up into a state of hysterical emotion. After a time they add to their activities that of gently spitting on his body, and finally they apply their lips to the patient's abdomen in the region of the liver, and draw up his flesh an inch or two, letting it flick back as they raise their heads. In time the patient faints or gets into a state approaching exhaustion. He is then left to come round free of pain or fever or cured of his snake-bite.

With the Harasīs and Mahra another curious custom obtains—that of never milking their sheep into a cold receptacle. A hot stone, heated in a fire, must first be introduced. The idea it suggests, that the warmth thus applied to the udders encourages a facile milking, cannot be wholly satisfactory, because the practice is observed only in respect of sheep, not of camels. I have seen milking taking place from behind—a habit depicted on the early limestone inlay from Tal al Abaid near Ur. In the Dhufar mountains, when lactation is ceasing in the cow, the tribesman blows down the animal's vagina. The Qara, amongst whom this practice is common, believe that the irritation causes an increased supply of milk. A shepherdess of the Bait Ash Shaikh tribe, from whom I purchased a sheep in Wadi Dhikur, would not agree to its being slaughtered in sunlight because of the fear that it would bring misfortune to her family, and this was a common belief. A Harsusi of my escort informed me that in no very distant times past the Harasīs would not only not slaughter, but not milk their flocks in sunlight, and to this day there are two breeds of sheep, "Banat Al Murtal" and "Banat Al Maqtuf," which no tribesman of whatsoever tribe would dare slaughter until after dark. This may, I think, conceivably hark back to some ancient sun-, moon- or star-worship cult.

Ordeal by fire is also in common use. There are several centres, the chief perhaps being Ghaidha in Mahra country. The process is for a red-hot iron to be placed on the suspect's outstretched tongue. To prove innocence he must promptly, at the conclusion of this operation, be able to command sufficient saliva to expectorate. My guide, Luwaiti, in avowing its fairness and respectability, told me of a case then pending where a young man who had killed his father, accidentally he affirmed, had volunteered to submit to the ordeal. Belief in witchcraft is general. Old men are particularly suspect, and are sometimes killed on the grounds that they could never have attained so ripe an age without communion with supernatural powers. Death is often attributed to the spell of some suspected witch, who is forthwith persecuted. A tribesman of Bait Ash Shaikh who incidentally fired on us when approaching his camels in Wadi Afar, had as a young man killed his widow cousin for being a witch—a murder which had public approbation if indeed the murderer was not actuated by public opinion. A recent case occurred within a month of my arrival, where an alleged witch had been murdered by no one knew whom, and no one was ever likely to tell. It appeared that she had been accused for long, but had proclaimed her innocence and had betaken herself to the exponent of the fire ordeal. There she emerged from the test vindicated: but even this failed to convince her tribe.

Steeped in superstition and clinging to many pagan customs, these Hamitic tribes of South Arabia are all avowedly Muslims of the Shafi sect. In diametrical opposition to Wahābi tenets they have much veneration for the shrines of saints, which they periodically visit. That of Muhammad Bin Ali, known also as Mazar Al Wali, near Murbat, is the most famous of them. The annual pilgrimage to it takes place on the 15th Sha'aban, when pilgrims from the far mountains assemble at the shrine, walk around it, and salute it with the nose-kiss, and here read the Qur'an. Amongst the credulous three consecutive journeys to this shrine are accounted to have the virtue of a pilgrimage to Mecca. Other shrines are Salih Bin Hud at Siddih, Haddad at Dahariz, and Bin Arbait at Raisut. Few of these tribesmen make the pilgrimage to Mecca: in fact, no Harsusi, I was told, had ever made the Mecca pilgrimage, but on the death of a relative a Harsusi will often defray a large part of the expenses of an Arab pilgrim on behalf of the departed. Disputants of these tribes are not always satisfied with an oath on the Qur'an: an oath upon a shrine is more acceptable. They have a special veneration for the Shurafa Saada, descendants of the prophet, after shaking whose hands they will raise their own reverently to their nostrils and take a few sniffs, apparently inhaling virtue thereby.

The languages of this region are four in number. Their distribution is as follows:—

Shahari is spoken by the Qara and the Shahara tribes
Mahri by the Mahra, and
Bautāhari and Harsusi are the dialects of the Bautāharia and Harasīs, respectively.

The region occupied by these tribes is to the Arabs of Ja'alan known directionally as Hadra: by them the Indian Ocean bordering these coasts is called Bahr Al Hadri; finally, the block of tribes occupying Central South Arabia, including all these Hamitic tribes except the Qara, is known as Ahl Al Hadāra; I therefore venture to give to these dialects the name of Hadāra group. The identity of the word with Hadoram of Genesis is suggested, also with the Adramitæ of Pliny. During my sojourn amongst these tribes I collected vocabularies of some 500 words of each of these dialects (fewer in the case of Bautāhara for lack of opportunity, passing as I did through the desert in their rear), and deduced a few simple grammatical rules. The four dialects would appear to be classifiable into two distinct categories:—

(*a*) Shahari.
(*b*) Mahri. Bautāhari, Harsusi.

(*a*) and (*b*) are mutually unintelligible, whereas members of the three dialects of (*b*) can with difficulty understand one another, though less so in the case of the Bautāhara than of the other two. It is interesting to observe that the rich and important Qara tribe employ Shahari, the speech of their dispossessed underlings. As regards the affinities of the three dialects of group (*b*), Bautāhari is considered by the others to be a depraved tongue, and is disparagingly referred to by the oft-quoted Arabic tag "language of birds." There is no written form of any of these Hadāra dialects, but I suggest that one or more of them must be of great local antiquity, for I discovered traces of rude inscriptions of an early alphabet, which seems to me to resemble Sabæan or Ethiopic characters, on boulders of monuments of an archaic kind over an extensive area; but these I will describe later. What strikes the ear of the listener to these dialects is the frequency of the *ll* sound met with in Welsh. In words akin to Arabic it seems to take the place of ج ز ذ غ ص ش س. But not invariably so, as the Arabic sound-values of these characters are also met with in the Hadara dialects. Indeed, all Arabic sound-values exist, except the guttural ع, and in addition to them ب (*p*) گ (*g*), and in the case of Shahari a nasal "n" or "m." This, and the fact that in words common to both Arabic and the Hadara group there are variations in the vowel-sounds, account for the fact that most of the geographical names have two slightly varying pronunciations, only one of which I have been able to record on my map. The affirmative is sometimes expressed (almost invariably by the Bautāhara) by drawing in the breath while gently nodding the head upwards: the Shahari tribesman, if he does not understand, puts his tongue out: the time-honoured Arabic expression *Inshallah* is here replaced by *Am Katīb* or *Ham Katīb*, a fatalistic reference to "that which is written." Two of these dialects, the Mahri and Shahari, at least, as they are spoken in the Western Hadhramaut and Socotra, have been extensively written up by the philologist Dr. Maximilian Bittner, working on the material brought home by Dr. Müller's

Arabian Expedition of 1902 and Count Landberg's expedition of 1898 and 1899. It is curious that Bittner calls part of his work "Studies in Shauri Language in the Mountains of Dhofar on the Persian Gulf." The mountains of Dhufar are not on the Persian Gulf, but on the Indian Ocean, and the term "Mountains of Dhufar" would itself seem here to be misleading. The region of activities of the Viennese Expedition was, I understand, the neighbourhood of Ba'l Hat and Nakab Al Hajar, and is not coincident with the mountains of Dhufar of this paper. While I have no pretensions to a knowledge of philology, and my word-lists have been made on the spot as one only among many activities, I hope a philologist will look into my material. A comparison of my word-lists with those of the South Arabian Expeditions, of the existence of which I had no knowledge at the time mine was made, may have some interesting results, especially as the fields of investigation would appear not to be the same. So far as my own uninstructed researches go it seems to me that the pronouns, verbs and language structures are the same in both sets of lists. But whereas the plurals of nouns I noticed to be almost invariably of the "broken-plural" variety, the dialects further west as analysed by Bittner seem generally to use an external termination approximating more to the regular Arabic forms. There are also differences in many substantives, and it is possible that the dialects of the tribes I visited who occupy the mountains or roam the southern confines of the Rub 'al Khali differ from the coastal dialects investigated by the philological expeditions. My Bautāhari and Harsusi dialects, which would appear to be related to Mahri, have never, I think, been previously noticed.

In contrast to the coastal plain and parched sands of the earlier part of my journey, the terrain of the Hamitic tribes passed through consisted of bleak and arid limestone hill and rolling country crossed by Wadi beds, shallow in the early stages and trough-like as the greater altitudes in the later stages of the journey were reached. Here, in these Wadi beds alone a sparse nourishment for man and beast was to be found in the water-hole, the acacia and gum-arabic trees, and the various camel thorns known as *warikh*, *thurmad*, *haram*, *ghussab*, *dha'a*, *thudiya*, *rimram*, *al ithal* (tamarisk), *thamama* and *hamigat*. The course from Manadhif (lat. 20° 00′, long. 57° 40′) to Juwara in Sauqira Bay lay over the plain of Al Dhahir, reaching a maximum elevation of 470 feet. Everywhere on our right hand the vast empty spaces of Jaddat al Harasīs spread out northwards, eventually to lose themselves in the sands of Rub 'al Khali. The term Rub 'al Khali, incidentally, is nowhere used by the inhabitants of these Southern Borderlands to mean the entire desert in its geographical sense; when used by me in talking to the inhabitants, however, it was sufficiently literal as to admit of no misunderstanding. Beyond Juwara we hugged the coast of Sauqira Bay through the Jazir littoral below what appeared to be low igneous formation. Leaving it by way of Wadi 'Ainain, we ascended to the plain of Jaddat Arkad about 1,000 feet in height, the Wadis throughout descending south-eastwards towards the coast. From Wadi Muqarrad, the western

limit of Arkad, we climbed again, threading our way through the northern fringes of Rakibīt, the great steppe borderland of Rub 'al Khali coming into view on our right hand, as now and then our tortuous course took us towards the edge of the mountain system on the desert side, and hence we continued gradually climbing to 2,000 feet, in Wadi Dhaghaub, the deep troughs of the Wadi beds now trending everywhere to the north. For six days prior to reaching Wadi Andhaūr the camels went unwatered, and we ourselves were reduced to the meagrest ration. The herbage was scant, and our camels carrying loads for six or seven hours a day through this difficult mountainous country were in a sorry condition. The horse cannot live in such conditions, and I saw no horse west of Ja'alan, and only a few dogs at Khaluf, throughout the whole of this journey through the southern borderland till reaching Dhufar. Goats will go longer without water than camels. Our camels, which were faltering on the sixth waterless day, could, I gathered, had they been without their loads, have gone ten days or more, and if grazing in the rains would survive a month without watering. During the rainy season these Badawin wander with their flocks of sheep and goats for six weeks without bringing them to water. They take no water for themselves, subsisting on the milk of their flocks. The oryx gazelle and rīm, and sand lizards must, of course, be practically non-drinking animals.

The archæological feature I met with throughout this journey which points to a great local antiquity for the non-Arabic speaking tribes, was a class of crude ground monument sometimes bearing inscribed characters of a possibly Sabæan alphabet (Pl. IX. Fig. 3). This monument consisted of a system of triliths, three elongated blocks of undressed stone (or sometimes round boulders with a naturally smooth surface), about 1½ feet high, standing on end and leaning inwards with their tops touching to ensure stability. These triliths were set up in series along one alignment, each pile standing equidistant from its neighbour about one and a-half paces. Sometimes the trilith had a fourth and smaller boulder superimposed, and occasionally a series of triliths was enclosed by an elliptical line of small pebbles. The series varied in number. I found them of 5, 7, 9, 14 and 15 triliths. Running parallel to each series at about three paces distant was a smaller series of large conical rubble heaps, modern equivalents of which I have seen elsewhere used for the kind of cooking, known to Arabs as *mashuwa*, a method of grilling flesh on heated stones. These, I suggest, had some sacrificial significance. Some of the smaller series of triliths, *e.g.* those of five in number, were without them: the longer lines had these sacrificial piles in the proportion of one to three or four triliths. Between the two were sometimes small square boulders which had no obvious function, unless they were used as seats.

These monuments had no common directional orientation, but wherever found were aligned with the axis of the Wadi. Most were entirely without inscriptions, certainly all the Eastern ones. Inscribed boulders were first met lying near the monuments in Wadi Andhaūr, but in Wadi Dhikur they were found as the head stone of one of the terminal triliths. That the rude scrolling was humanly made was a

discovery that the illiterate locals and my escort would scarcely believe. The inscriptions were generally separate characters 1½ inches in size, rudely done, and having a dotted superficial impression which suggested that the implement used was a nail-headed flint hammer. Transport limitations prevented my bringing back more than one specimen of this work—presumably representing the picture of a camel—which I have presented to the British Museum (Pl. V. Fig. 2). On account of weathering of the stone, a great many of the inscriptions were unrecognizable, but in almost all of them a character or two showed up clearly, and amongst these I noticed  (*see* Text-fig. 2). Those inscriptions that were better preserved I copied in full: of one I made a squeeze (No. 6) and another I photographed. The places where these monuments were found are as follows: Wadi Sarab, entrance to Wadi 'Ainain, Wadi Banat Ar Raghaif, Wadi Haradha, Wadi Andhaûr below Khunghari Pass, Wadi Dhaghaub, and Wadi Dhikur. It is in the two last-mentioned places, however, that they occur with great frequency and are inscribed, particularly in the Wadi Dhikur, where there are long lines of them in parallel groups. It is, I think, beyond doubt that they are graves. Not only is this suggested by their appearance, but the Wadi Dhikur preserves a continuous burial tradition, as is witnessed by the following facts:—(i) It contains a large Muslim cemetery, and was a favourite burial-ground up to quite recent years: (ii) two other cemeteries of a pre-Islamic period are marked by two different types of non-oriented grave: (iii) the name Wadi Dhikur may be translated Valley of Remembrance. As regards (ii), one of these two other grave-types is a cave sepulchre. The left-hand Wadi ridge is honeycombed with cavities which, having received the body, have been bricked up with loose small stones. The other grave-type consists of a giant ovoid of large flat slabs of rock, the largest grave was sixteen paces long and six to seven in breadth. The individual slab of rock, now black with age, seemed roughly about three to four feet square and so heavy as to require many men to handle it. Judging from the weathered condition of the stone and the rude nature of the construction, this last type may, I think, be the earliest of all. These graves, while grouped generally, with their long axis in one direction, were sometimes bunched together in rosette formation. I also saw them at Khor Ruri and Khor Suli in the Dhufar plain, whither the trilithon type did not reach.

Wadi Dhaghaub and Wadi Dhikur, the approaches by which I made my way over the Qara Mountains from the Rub 'al Khali side, involve a quick ascent from 2,000 feet in the Wadi Dhaghaub, through 2,300 feet in the Wadi Dhikur to the Divide 3,000 feet. They are the centre of the frankincense country and part of the habitat of the Qara tribe. Between Wadi Afar and Wadi Dhaghaub we crossed a large jungle of the frankincense tree, *anghur*, the most extensive of any passed. It resembled an orchard of young three-year-old fruit trees. One of my escort brought me a specimen of the sap on his dagger blade of hard-like appearance and pleasant odour. The frankincense country owned chiefly by the Qara, is

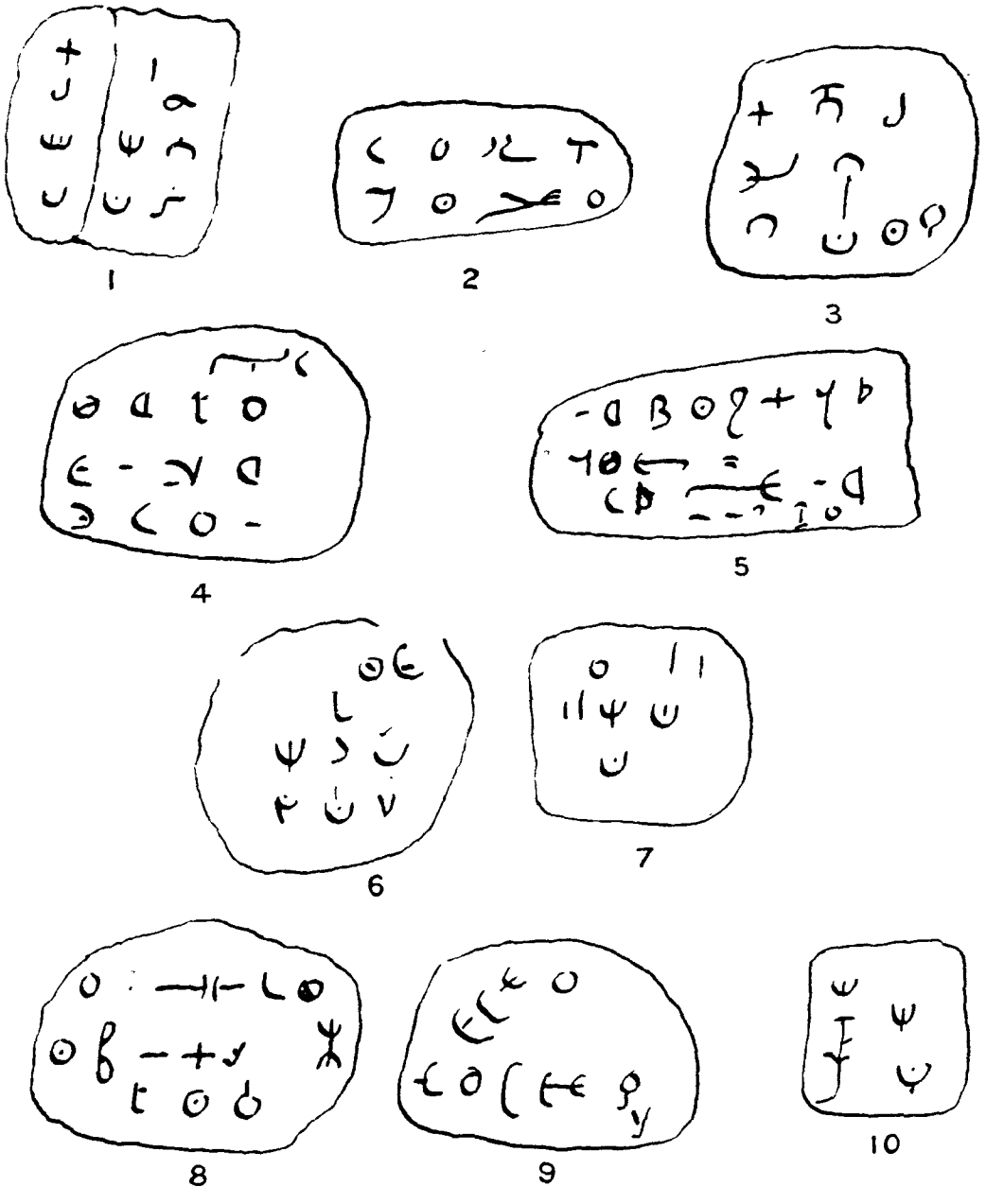


FIG. 2.—INSCRIPTIONS ON LARGE ROUNDED BLOCKS OF STONE.[1]

NOS. 1–3. IN WADI ANDHOR. 4. IN WADI DHARKABUN. 5–10. IN WADI DHIKUR. (NO. 5 IS BROKEN AT BOTH ENDS, AND PROBABLY FORMS PART OF A LONGER INSCRIPTION.)

[1] The significance of these inscriptions is uncertain, but Dr. Stanley A. Cook, who was at first inclined to treat them as South Arabian, is now inclined to regard them as camel-brands, *wusūm*, and refers to somewhat similar signs in Doughty, *Arabia Deserta*, I, 125, and Bent, *Southern Arabia*, p. 369 and Plate IV.

worked by them and by the Mahra and Al Kathīr, women as well as men, the owners' share being one-tenth of the produce. The tree has a silver bark, of bushlike appearance, with a tiny insignificant leaf, eaten by the locally bred camel. To secure the frankincense the scaly bark is scratched with a knife (not a deep incision) and is left for a week. The sap which exudes has by then dried into a transparent green resinous substance of delicate fragrance, and this is the article of commerce which will find its way to the Indian temples. We ascended the white pebbly bed of Wadi Dhikur, and were rewarded by a magnificent spectacle. Red cliffs, 300 feet and more, towered above us on each side, their face sculped by natural action into loges throwing fantastic dark shadows. The scene reminded me of Petra. Near the top at 2,300 feet was a pool, where our animals watered while I collected one or two pink-red fossils. Thence we returned down the same Wadi to the Tomb area, with its gentler slopes clothed with frankincense trees. There three sheikhs of the Qara had arrived for me, sent by my friend Saiyid Sa'ud, the Governor of Dhufar. Bare-bodied except for the shirts about their loins, an end of which was thrown over their shoulders, and armed with swords and bucklers, they were to accompany me for the rest of the journey. On the morrow we despatched our camels by another way and climbed the steep side of the valley on the right, a hundred feet or so above. Thence we passed through rolling country thick with *tishgāūt* jungle—a libaniferous shrub inferior to frankincense—gradually climbing to the Divide at 3,000 feet, the inland limit of the region which receives the plentiful rainfall of the south-west monsoon. The Qara and Shahara mountaineers are troglodytes (Pl. VII. Fig. 2), and their caves are generally marked by low hive-shaped straw huts of their own erecting. I was anxious to see the abyss which Bent had identified with Abyssapolis, so thither—the natives call it Ad Dahaq—we proceeded, descending through rolling yellow meadows where cattle grazed, and occasionally catching a glimpse of the blue sea of the Indian Ocean over Taqa, or the blue range of Samham behind Murbat, as we went. Passing the Shahari village of Shihait (Pl. VIII), we soon arrived at the brink of the right bank overlooking the valley of Darbat. The spectacle is delightful. You look down some 200 feet through a tangle of tree-tops to the stream below lined with trembling willows: opposite, the hills are equally precipitous and similarly wooded. In whatever direction you look is a wall of tropical jungle, and below it the stream which is flowing towards the abyss. We made our way down the hill-side to this stream, marked by tropical trees and luxuriant creepers and alive with heron and other water-fowl. Thence we crawled to the edge of the Dahaq and peered down its precipitous face 500 feet below. With much difficulty we clambered down to its wooded foot and followed the meandering Wadi to its mouth—Khor Ruri. The ruins hereabout—Husn Mirahadh and the entrance of Inqitat (Bent's Khatiya)—are clearly the site of Moscha of the Periplus (Ptolemy's Abyssapolis as suggested by Bent from its proximity with Ad Dahaq). Miles' identification of Moscha with Hasik, 80 miles to the east, is, I think, a less happy one. The Arab geographers



A B C

FIG. 1.—THE AUTHOR'S THREE COMPANIONS.
A AND C, BADAWIN OF JANABA TRIBE. B, BADU OF YAL WAHIBA.



FIG. 2.—CHIPPED FIGURE ON ROCK (BRITISH MUSEUM). SCALE $\frac{1}{2}$. (*See* P. 108.)



FIG. 1.—SHAHARA TRIBESMEN.



FIG. 2.—QARA TRIBESMEN.

AMONG SOME UNKNOWN TRIBES OF SOUTH ARABIA.



FIG. 2.—ZARA TRIBESMEN AT ENTRANCE OF CAVE ABOVE DHURAITUM, QARA MOUNTAINS.



FIG. 1.—THE AMIR OF BANI BU ALI TRIBE (PROBABLY THE "BIAULAIE" OF PTOLEMY'S MAP).

AMONG SOME UNKNOWN TRIBES OF SOUTH ARABIA.

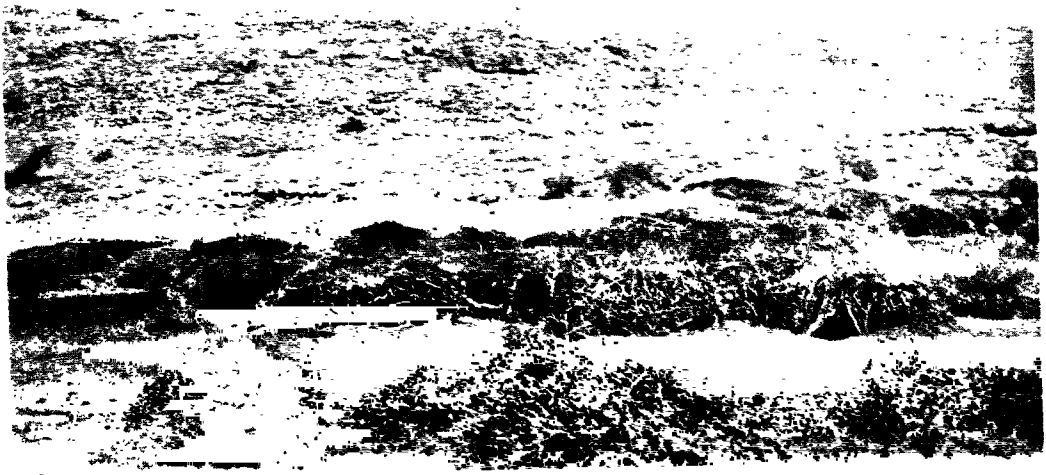


FIG. 1.



FIG. 2.

TWO VIEWS OF SHIHAIT, A SHAHARI VILLAGE. CENTRAL SOUTH ARABIA.



FIG. 1. RUINS OF BALID, DHUFAR PLAIN: FIVE TYPES OF COLUMNS, AND CITADEL IN BACKGROUND.



FIG. 2. RUINS OF BALID, DHUFAR PLAIN, ANOTHER TYPE OF COLUMN.



FIG. 3.—GROUP OF "TRILITHS," INSCRIBED WITH EARLY HIMYARITIC CHARACTERS [SYMBOLIC OF SABÆAN TRINITY—SUN, MOON, AND STAR GOD?]. (*See* P. 107.)



FIG. 1.—SHRINE OF QUBRAT HAMRAN, 15TH OR 16TH CENTURY.



FIG. 2.—RUINS NEAR INGATAT, SHOWING TYPICAL COLUMNS.

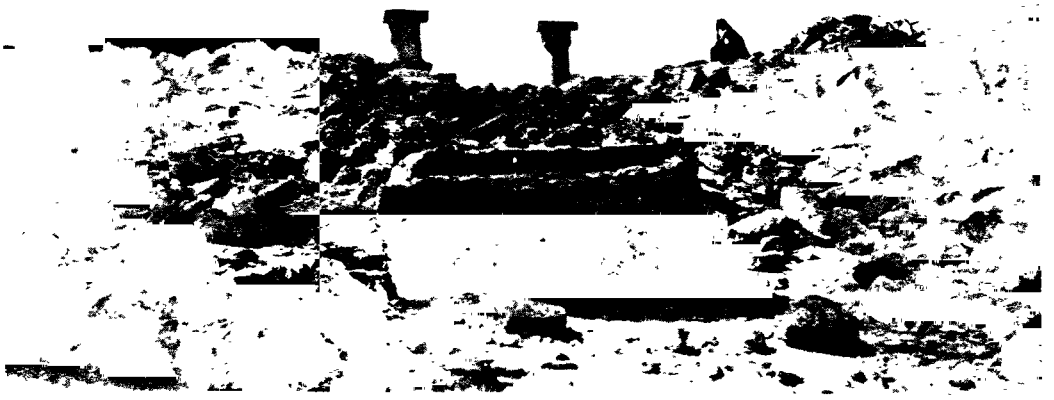


FIG. 3.—RUINS AT TAQA (DHUFAR), SHOWING TYPICAL OCTAGONAL COLUMNS, AND STONE WATER-TANK IN FOREGROUND.

give Murbat as the site of the ancient seaport and capital of Dhufar, which lasted until the fourth century Hejira. The Shaikh of modern Murbat, 20 miles to the east, who accompanied me to these ruins around Khor Ruri, volunteered the information that this was the site of the ancient Murbat, and I further elicited from a Shahari that in their dialect Murbat is called Sīk—a word which would appear to preserve the important radicals of the name Moscha. From here to Raisut is the rich plain of Dhufar with its capital at Salala. Here the coconut is the predominant vegetation as opposed to the date palm of Oman, and, besides, there grow in abundance cotton, tobacco, indigo, cereals, papya, melons, etc. This plain of Dhufar has widespread ruins (*see* Pls. IX and X). The most characteristic feature of these ruins is a plain primitive column, with octagonal shaft, square corbelled cap, and square base, generally a monolith. It is usually about 6 feet high, and this and its corbelled cap suggest that it supported arches. Arch masonry does in fact lie strewn about amidst the debris, and an arch of a later period still stands. Bent connects the Dhufar column with columns he saw at Adulis on the Red Sea, and with those of Kulue and Aksum in Abyssinia, and others he heard of at Ma'araba in the Yemen, and says that no doubt can be entertained that they were built by the same people. Bent's other descriptions of the archæological remains as given in his *Southern Arabia* are, however, superficial, and his sarcophagi are, I consider, only water-tanks (*see* Pl. X, Fig. 3). The most elaborate ruins—Balīd (Pl. IX, Figs. 1 and 2)—have, however, been very fully described by Carter, the surgeon of the Indian Naval brig *Palinurus*, in a paper given to the Royal Geographical Society in 1846. I attempted in the short time at my disposal to make measurements of the monuments I saw, and slight drawings of the decorated capitals and bases.

The word "Dhufar" is susceptible of the division Dhu Afar (Afar being the Wadi bounding one of the largest frankincense areas), though it should be mentioned that it is spelt with a ظ, not ض. I unfortunately omitted to question the natives on its probable derivation. In the Hadara dialects modifications of this word, *e.g.* Āfur, Aufur, mean "red," and the meaning "Red Country" is satisfied by the predominant red colour of Wadi Afar and Wadi Dhikur. In the Shahari dialects the word Āfar means "clouds," and the name "the cloudy country" is satisfied by Dhufar's continuous rainfall for three months during the south-west monsoon.[1] Whether Ophir, which has been suggested on grounds of similarity of name, receives any confirmation from such speculations, is perhaps a debatable matter.

[1] It must be remembered that there were two Dhufars in Arab history, and the Arab geographer Abril Fida himself confused them. Dhufar az Zaid, near Sana (in Arrian's time the seat of government), is to be distinguished from Dhufar as Sahil of this paper. The former seems to have flourished for six centuries; the latter to have gone on for thousands of years

THE NATURE OF THE COLOUR OF POTTERY, WITH SPECIAL REFERENCE TO THAT OF ANCIENT EGYPT.

By A. Lucas, O.B.E., F.I.C.

The colour of pottery, that is to say the colour of the outer and inner surfaces, apart from painted designs, may be red (various shades, including brown), grey (generally ash-grey or greenish-grey), drab, white, black, or partly red and partly black. This colour may be: (1) That of the substance of the ware, which may be (*a*) original to the clay used; (*b*) the original clay colour slightly modified; or (*c*) a colour entirely different from the original colour of the clay. (2) That of a thin wash of clay (slip),[1] or of a coating of colour put on to impart a different hue or a smoother surface or to make the ware less permeable.

The nature of these various colours may now be described.

Red Pottery.

A red colour may be due either to the use of clay that contains a relatively large proportion of iron compounds that become converted when heated into the red oxide, or to the application of red oxide of iron to the surface. The oxide employed for the latter purpose is frequently called hæmatite, but the use of this word is very misleading, and in Egyptology it would be better to confine the term hæmatite to the black, opaque mineral with a metallic lustre that was employed for making beads, amulets, and other small objects. Although this black massive variety of hæmatite consists of oxide of iron, and although it gives a red powder when finely ground, it is improbable that it was generally used for colouring pottery, and the material employed is much more likely to have been a naturally occurring red ochre, which is an earthy form of hæmatite consisting of the same oxide of iron with the addition of a little clayey matter. This latter was well known to the ancient Egyptians and was in regular use as a pigment, and it is found in the Nile valley and hence was more easily accessible than the massive variety which occurs in the eastern desert and in Sinai. At the present day, too, when a red colouring matter is applied to Egyptian pottery, it is red ochre or some form of ferruginous earth that is used.[2]

[1] Finely levigated clay mixed with water to the consistency of cream and applied before firing.

[2] W. S. Blackman, *The Fellahin of Upper Egypt* (1927), p. 146. O. Bentley and J. W. Crowfoot, "Nuba Pots in the Gordon College," in *Sudan Notes and Records*, vii (1924), pp. 18–28.

Red pottery may be either uniformly red throughout, or, more generally, especially in the case of the thicker and coarser kinds, it is red on both the outer and inner surfaces and grey or black in the centre, this central zone varying in thickness from a thin line to a wide band. This grey or black is due to the carbonization of organic matter, either contained as a natural impurity in the clay in the form of decayed material of vegetable origin (humus), an occurrence by no means infrequent, or artificially added. Although this organic matter may cause the clay to be naturally dark coloured, the final grey or black is due to its carbonization. In predynastic and early dynastic Egyptian pottery,[1] in certain prehistoric pottery of Mesopotamia,[2] in the prehistoric pottery found at Anau,[3] in ancient pottery from Anatolia,[4] and, doubtless, in pottery from other periods and other places, either chopped straw has been found or there is evidence that chopped straw has been used and has been burned out during firing. It is also quite common in Egypt,[5] the Sudan,[6] and probably elsewhere, at the present day, to add finely chopped straw, fine chaff, or powdered animal dung to certain kinds of clay before it is kneaded, in order to reduce the stickiness (which makes it difficult to manipulate), to expedite drying, and also to prevent undue shrinkage with cracking and distortion during drying. When such pottery is fired with free access of air, the organic matter first carbonizes and becomes black, the action beginning from the surface and slowly extending inwards, and, if the walls of the vessel are thin or the heat considerable or long continued, this blackened matter then gradually burns away with the simultaneous conversion of the iron compounds into red oxide: but if the vessel is thick or the heat not great or not of long duration, the organic matter in the thickness of the ware is merely charred and remains, giving a grey or black colour to the zone in the centre.

In view of the discussion that follows relative to the nature of the black colour of certain pottery, it may be emphasized that the grey or black now referred to is due, as stated, to the presence of charred organic matter and neither to smoke nor to black oxide of iron. This will probably generally be admitted. A progressive darkening, beginning from the surface and extending inwards, with the subsequent gradual disappearance of the black and the production of a red colour, is typical

[1] J. E. Quibell, "Archaic Objects," *Cairo Cat.*, 1905, pp. 137–77. G. A. Reisner, *Excavations at Kerma*, iv–v, 1923, p. 449.

[2] C. L. Woolley, in *Ur Excavations, I, Al-Ubaid* (H. R. Hall and C. L. Woolley, 1927), p. 161.

[3] H. C. Schellenberg, in *Explorations in Turkestan* (R. Pumpelly, 1908), ii, p. 473.

[4] H. Frankfort, *Studies in Early Pottery of the Near East*, i, p. 79; ii, p. 65, n. 2.

[5] W. S. Blackman, *op. cit.*, pp. 135, 140, 143, 148, 149.

[6] O. Bentley and J. W. Crowfoot, *op. cit.* H. A. Macmichael, "Pottery Making on the Blue Nile," in *Sudan Notes and Records*, v (1922), pp. 33–8. J. W. Crowfoot, "Further Notes on Pottery," in *Sudan Notes and Records*, viii (1925), p. 126. G. W. Grabham, "Native Pottery Methods in the Anglo-Egyptian Sudan," in *Brit. Assoc. Report*, 1910, p. 729.

of the behaviour of clay containing organic matter and iron compounds, such as hydrated ferric oxide, when heated, and, on a small scale, is a common phenomenon in a chemical laboratory where clays are tested. In these cases there can be no doubt about the cause ; the heating is carried out either over a Bunsen flame, which is smokeless, or in a muffle heated by gas or electricity, which are also smokeless, and the blackening, which begins almost as soon as the heat is applied, spreads quickly and uniformly throughout the material, and eventually disappears giving place to a red colour. The combustion, too, takes place with free access of air, and the conditions, therefore, are oxidizing and not reducing. These effects can readily be reproduced by heating a good quality light-coloured clay that by itself does not burn red, to which has been added a small proportion of finely divided organic matter and a little yellow ochre or powdered dehydrated ferrous sulphate. That this grey or black in the interior of the substance of the ware, otherwise red, is due to the presence of carbonaceous matter, may also be proved by chemical analysis, and has been so proved by the writer in the case of a large number of specimens of ancient Egyptian pottery of late date, mostly Coptic. This was done by mixing a little of the finely powdered material with lead chromate, strongly heating the mixture, and passing the gas that was given off into lime-water, which became milky, thus proving the presence of carbon dioxide that can only have been derived from carbon, and carbon, therefore, must have been present. Frequently a few tiny particles of magnetic material, probably magnetic oxide or iron, are also present, but the proportion of these is too small to account for the grey or black colour, and they are almost certainly derived from a little magnetic oxide present originally in the clay. This compound is very common in Nile silt, and occurs therefore in the Nile deposits, and hence is a very usual constituent of Egyptian clays ; in certain localities, too, it forms a narrow black band in the sand at the side of the river.

Grey and Drab Pottery.

Grey and drab colours, whether of the substance of the ware or of an applied slip, are either natural to the clay used or that colour slightly modified by firing. The clay employed for these wares, as is indicated by their light colour, is generally practically free from naturally occurring organic matter (such material being dark) and also from iron compounds, or, if the latter are present in more than small proportion, calcium carbonate (carbonate of lime) is also present, and such clays do not produce red oxide when heated.[1] Sometimes, however, although there may be both organic matter and red oxide-producing compounds in small amount, the heat of the firing has not been sufficiently strong to char the former or to redden the latter, and, when this is the case, on heating such ware more strongly it darkens slightly, though never very much, or if heated still more strongly it becomes reddish.

[1] J. Burton in *A Dict. of Applied Chemistry* (Sir Ed. Thorpe), art. "Clay," ii, 1912, p. 77. H. A. Seger, *Collected Writings*, i (Easton, Pa., 1902), pp. 131, 343–7, 360–9.

Certain kinds of modern Egyptian pottery (imitation kulleh ware) made at Old Cairo, and possibly elsewhere, are grey outside and for a short distance beneath the outer surface, but the rest of the ware, including the inner surface, is of a light-red colour. The grey outer surface thus has the appearance of a slip, though it is not a slip, the ware being homogeneous in composition. The potter's explanation of the bi-coloured effect is, that the grey is caused by the greater heat to which the outer surface has been exposed, and that the red of the interior and inner surface is due to these parts having received less heat. This is probably correct (although it is the opposite of what might be expected, and the opposite of what occurs with many other clay mixtures, usually the greater the heat the more red oxide that is produced), since intense and prolonged heating in the laboratory does not turn the grey to red, as would be the case if the grey were merely the consequence of a lower temperature and the red the effect of greater heat. The probable explanation of the phenomenon is that the clay is calcareous, and that, at the temperature to which the outside of the pots is subjected, the calcium and iron compounds combine, and so the latter are no longer available to form red oxide. That the red on further heating does not become grey may be explained by assuming that the iron compounds when once in the form of red oxide, which is very inert, are no longer able to combine with the carbonate of lime. Grey and drab pottery occasionally show a grey or black zone in the centre, which is due to the same cause as in the case of red pottery.

White Pottery.

White-coloured pottery is not very common, and in the few instances, mostly of Eighteenth Dynasty date, examined by the writer the colour has been due to a thin coating of carbonate of lime (not lime as sometimes stated)[1] applied as a wash to the pottery after firing.

Black Pottery.

Black pottery may be black on the outer surface only or it may be black throughout. A black surface-colour may be produced in at least two different ways, namely, by the agency of smoke or soot, or by the application of a black colour other than soot.

It is well known that pottery exposed to the smoke from a smoky fire becomes covered with a layer of soot and thus is superficially blackened. This does not mean, however, that pottery fired in a primitive manner, where there was a mixed heap of pots and fuel (always either vegetable material or animal dung), and where the fire in the earlier stages was very smoky, always and necessarily acquired a coating of soot, for such was not the case, any soot deposited at the beginning of the operation, the distribution of which would usually be very irregular and partial, being generally burnt off at a later stage. This is well exemplified at the present

[1] H. Frankfort, *op. cit.*, ii, p. 76.

day in the Sudan, where the final colour of pottery so fired, unless changed by a special subsequent operation, is either grey or red, according to the nature of the clay used.[1] In the case of primitive modern pottery, where the colour is due to soot, this is sometimes deliberately applied either before or after firing. Thus, in one district in the Sudan, soot (not from the pottery itself, but of extraneous origin) mixed with oil is smeared on to the vessels, well rubbed in and polished before firing.[2] In another district a handful of grass is brushed over the pots after firing while they are red-hot, with the result that a blackening is produced.[3] In other places a somewhat similar process is employed, but as the black penetrates beyond the surface into the interior of the ware, the description of this will be deferred until pottery that is entirely black is dealt with.

The application to the surface of pottery of a black colouring agent other than smoke is not recorded from Egypt, though the appearance of some of the Badarian pottery strongly suggests the use of graphite[4] (blacklead, plumbago), a form of carbon that imparts a greyish sub-metallic lustre to the ware. Graphite, however, was employed for certain types of pottery found by Reisner at Kerma, in the Sudan,[5] and it is still employed at the present day in another district of the Sudan to give a brilliant polish to a surface already black.[6] It is apparently also used in Madagascar, since there is a pottery dish from this place in the Pitt-Rivers Museum at Oxford that is labelled "blackened with plumbago."

Pottery having an applied black glaze, as distinguished from a polish, will not be considered, as it is outside the scope of the present paper.

The colour of pottery that is black throughout has been accounted for in four different ways—first, by the action of smoke; second, by the presence of carbonaceous matter; third, by the impregnation of the pottery with resin or vegetable matter, which is subsequently carbonized; and fourth, by the formation of black oxide of iron instead of the more usual red oxide. These possibilities may now be considered.

The fact that the outside of a vessel may be blackened by smoke has already been dealt with: it is a matter of common knowledge about which there can be no doubt, but whether smoke is able to penetrate into the substance of pottery, so as to blacken it throughout is much disputed. Hostmann[7] and Flinders Petrie[8] both

[1] H. A. Macmichael, *op. cit.*, pp. 33–8.

[2] O. Bentley and J. W. Crowfoot, *op. cit.*, p. 20.

[3] J. W. Crowfoot, *op. cit.*, pp. 133–4. In the absence of any definite statement on the point, it is assumed that the blackening described is merely superficial; if it extends below the surface, the pottery falls into the next category.

[4] *See* p. 119. Manifestly considerable caution is necessary before attributing a sub-metallic lustre to the use of graphite solely from its appearance.

[5] G. A. Reisner, *op. cit.*, p. 329.

[6] J. W. Crowfoot, *op. cit.*, pp. 133–4.

[7] C. Hostmann, in *Troja* (H. Schliemann, 1884), p. 33.

[8] W. M. Flinders Petrie, *The Arts and Crafts of Ancient Egypt* (1910), p. 130.

state that such penetration cannot occur, while Virchow,[1] Franchet,[2] and Frankfort[3] all say that it does take place, the latter, however, qualifying his statement by limiting the possibility to the beginning of the firing before the pottery is baked hard. Crowfoot,[4] Burton,[5] and Mercer[6] all describe processes in which dense smoke is a prominent feature, and in which the blackening, which is attributed to the smoke, penetrates well into the thickness of the ware. The method mentioned by Crowfoot is practised in certain districts of the Sudan; that referred to by Burton is used on the Gold Coast; while Mercer's process was purely an experimental one.[7] In all these methods the pottery direct from the fire and still red-hot is covered with organic material (chaff, dung, leaves, sawdust, oats, or corncobs, respectively), which, in contact with the hot pots, smoulders and gives off dense smoke. In a short time (a few minutes in the Sudan and about twenty minutes on the Gold Coast) the pottery becomes blackened, not merely on the surface, but throughout if the vessels are thin, or well into the substance of the ware if the vessels are thick.

Enquiries made concerning the modern manufacture of black pottery in Egypt elicited the information that in one locality near Zagazig the method adopted is to make pottery that ordinarily would be red in colour, and at the end of the baking, when the flames of the fuel have died down, but while the pots are still red-hot, to open the furnace door, throw a mixture of coal and pitch in small pieces on to the hot ashes, close the door again and leave the kiln over night. The coal and pitch do not come in contact with the pottery, and are merely used to produce dense smoke, and it is this that blackens the pots. The resulting pottery, although generally described as black, is really dark grey, not only on both surfaces but through to the centre, with a suspicion of brown just below both the outer and inner surfaces.

Randall-MacIver attributes the blackening of certain pottery in Upper Egypt to the "fierce heat" caused by the addition of chopped straw to the fuel,[8] but it would seem more probable that the straw is employed, like the coal and pitch mentioned, for its smoke-producing properties. The writer has produced on a small scale in the laboratory blackening such as that described, by heating modern greenish-grey ḳulleh ware, both baked and unbaked, in a Bunsen flame until red-hot and then burying it immediately in sawdust, in chopped straw and in bran,

[1] In *Ilios* (H. Schliemann, 1880), p. 219.

[2] L. Franchet, *Rapport sur une Mission en Crète et en Égypte* (Paris, 1917), p. 91.

[3] H. Frankfort, *op. cit.*, ii, p. 141, n. 2.

[4] J. W. Crowfoot, *op. cit.*, p. 131.

[5] W. Burton, in *Mem. and Proc. Manchester Lit. and Phil. Soc.*, lvii, part 2.

[6] H. L. Mercer, in *Areika* (D. Randall-MacIver and C. L. Woolley, 1919), p. 17.

[7] Mercer's experimental pots are now in the Pitt-Rivers Museum at Oxford, and are excellent reproductions of the early Egyptian ware, the black-topped specimens particularly being so like the genuine ware that it is difficult to tell one from the other. Another similar black-topped pot, also in the same Museum, is from an "ancient iron-age grave in stone circle," southern India.

[8] D. Randall-MacIver, "The Manufacture of Pottery in Upper Egypt," in *Journ. Anthrop. Inst.*, xxxv (1905), pp. 20–9.

respectively, and allowing it to remain for various periods of time, ranging from a few minutes up to about half an hour. The sawdust, chopped straw, and bran becoming carbonized, produce dense smoke, with, as the final result in every case, a blackening of both surfaces of the pottery, together with always a definite penetration, generally taking the form of a narrow band of black at each side, with a dark-grey central zone. In other experiments, pieces of similar pottery (cold) were suspended by wire inside and near the top of a metal cylinder, which was closed, except for the two small holes at the top through which the wire passed. At the bottom of the cylinder was a deep layer of sawdust, chopped straw or bran. Heat was supplied outside the bottom of the cylinder until smoke ceased to issue at the top. When sawdust was used, black tarry matter was given off in addition to smoke, and this condensed at the top of the cylinder. In every instance the pottery was blackened, and in every instance, too, the black penetrated beyond the surface, in some cases the ware becoming grey through to the centre. Red-polished sherds of black-topped Badarian pottery were also blackened by making them red-hot and at once burying them in sawdust, and in each case the blackened surface had a sub-metallic appearance similar to that produced by treatment with graphite.

The experimental blackened pottery, when tested in the manner already described, was proved to contain carbon or carbonaceous matter, and when the original material before blackening gave a test for carbon, as was sometimes the case, the blackened specimens showed still more. In some instances the blackened material when finely powdered was very slightly magnetic, but in all such cases the original unblackened pottery was equally magnetic, and the magnetic property was found to be confined to tiny black particles, scattered throughout the ware, which apparently were magnetic oxide of iron originating in the clay used.

On account of the conditions under which the experimental blackening takes place, namely, the very short time required and the rapidly falling temperature of the pottery in those cases in which it was hot at the commencement of the operation, and particularly that in some of the experiments, the pottery was not heated at all, except slightly and incidentally by the hot smoke, there cannot be any reduction of red oxide of iron to black oxide, and hence the black colour must be due to some other cause, the only likely one being the presence of carbon or carbonaceous matter, which is confirmed by chemical analysis. Further proof that the blackening is not due to a reduction of red oxide to magnetic oxide is afforded by the absence in some cases of any magnetic property whatever, and when magnetic oxide is present the minute proportion in which it occurs is much too small to produce a general blackening, and this oxide can be shown to be derived from the clay used.

Pottery, therefore, may be coloured grey or black throughout, even after it has been baked hard, by a short exposure to dense smoke, but whether the effect is

always entirely due to smoke, or sometimes partly to accompanying tarry matter, is not certain. That smoke or tarry matter can penetrate clay is well exemplified by the gradual colouring of a clay pipe; and meerschaum also, a somewhat similar material, is coloured in the same manner.

In this connection it may be mentioned that, although smoke consists of solid particles, these are very minute, being of the order of about one-thousandth of a millimetre to about one-hundred-thousandth of a millimetre in diameter,[1] and they cannot separately be seen by the naked eye, the "blacks" or "smuts" observed when a chimney or a lamp "smokes" not being what is scientifically meant by smoke, but immensely larger particles. Considering, therefore, only the minute size of smoke particles and the general porous nature of ancient pottery, and neglecting for a moment the positive evidence in favour of the penetration of smoke, it is manifestly unscientific to deny that blackening, such as that described, may be due to smoke, the penetration of which would naturally be aided by the contraction of the air in the pores of the pottery as cooling progressed.

The second method of accounting for the colour of pottery that is black throughout, namely, to attribute it to the presence of carbonaceous matter in the clay, is accepted by Franchet[2] and others for certain ancient pottery, but the former gives no proof for his statement that the carbonaceous matter, although often humus, was occasionally charcoal (*charbon pulvérisé*).[3]

That certain kinds of clay, especially that employed for common red ware, naturally contains carbonaceous matter that blackens when heated, has already been mentioned when dealing with that ware, and any dark-coloured clay is likely to contain such material. In various localities, too, both ancient and modern, as already stated, organic matter, such as chopped straw, chaff, and animal dung, was, or is, added to the clay before use, and this also becomes black when heated sufficiently, but not too strongly. Undoubtedly, therefore, black pottery may be produced by the use of clay containing organic matter, but only under certain conditions, namely, that the heat or the air supply, or both, should be insufficient for complete combustion. It should be specially noted, too, that the mere presence of smoke, as occurs in primitive methods of firing, means both a comparatively low temperature and also the partial exclusion of air, though not necessarily the presence of a reducing atmosphere, as is sometimes assumed,[4] a reducing atmosphere not being merely the absence of the usual complement of air or even the momentary presence of small proportions of reducing gases, but the presence of considerable proportions of such gases operating over a somewhat lengthy period of time. This

[1] W. E. Gibbs, *Clouds and Smokes* (1924), p. 130.

[2] L. Franchet, "L'Emploi des Limons dans la Céramique Préhistorique." in *Rev. Anthropol.*, 1922, pp. 93–108.

[3] L. Franchet, *Céramique Primitive*, p. 86.

[4] J. W. Hayes, "Prehistoric and Aboriginal Pottery Manufacture," in *Journ. Roy. Anthrop. Inst.*, xli (1911), pp. 260–77. H. Frankfort, *op. cit.*, ii, p. 141.

does not mean, however, that in a modern pottery-kiln a reducing atmosphere may not be obtained.

The third explanation accounts for the colour of black pottery by the use of resin or vegetable matter that is afterwards carbonized: thus Hostmann states[1] that certain ancient black pottery was produced by treating the ware with a thin coating of pine resin, with possibly the addition of a little olive oil, and subsequently heating the pots until the resin and oil were carbonized. Although this treatment would blacken the ware, no evidence that any such process was used is given and its employment seems most improbable. Myres mentions[2] a method used in Borneo, where modern pottery is blackened by impregnating it with a liquid infusion of vegetable matter which is then carbonized by heat. Haddon, however, who states that the infusion used is one of mango bark, says that although this darkens the ware it does not make it black.[3]

In this connection the black inner surface found in Egyptian wine-jars of the Græco-Roman period may be mentioned. This is due to a thin coating of resin employed to render the jars impermeable to liquids.[4] Although the resin is now black, it was almost certainly not so originally, but was blackened by charring during the heating necessary to render it sufficiently liquid to flow as a thin coating over the inside of the jar. A deposit of carbonized material is often found at the apex of the jars, and this, together with the black inner coating, has often been analysed by the writer and always found to be resin.

The fourth method of accounting for the colour of pottery that is black throughout is to assume that the clay contained compounds of iron of such a nature that when heated in a reducing atmosphere they were converted into black oxide. This is theoretically possible, and from a chemical aspect is very attractive, and the question of whether it actually occurs will be discussed when dealing with red-and-black pottery now to be described.

Red-and-Black Pottery.

The distribution of the red and black colours in ancient Egyptian pottery, where the two colours occur side by side, usually takes the form of a black top, with generally also a black interior surface, to an otherwise red vessel, the black of the top extending through the thickness of the ware, while the red of the body only penetrates a short distance below the surface. The explanation often given

[1] C. Hostmann, in *Troja* (H. Schliemann, 1884), p. 33.

[2] J. L. Myres, in *Man*, 1901, 78; in *Journ. Anthrop. Inst.*, xxxiii (1903), p. 369.

[3] A. C. Haddon, in *Man*, 1901, 95.

[4] Pliny (*Natural History*, xiv, ch. 25) seems to refer to a similar method: he says, "The pitch (*i.e.* blackened resin) most highly esteemed in Italy for preparing vessels for storing wine is that which comes from Bruttium."

to account for the colour of this pottery is that proposed by Flinders Petrie[1] and now frequently accepted,[2] namely, that the black colour is due to black oxide of iron and the red colour to red oxide of iron, both formed at the same time from the iron compounds present in the clay, the different effects being produced by the vessel having been fired in an inverted position with the mouth downwards, the rim being buried in the ashes. In this manner the air supply reaching the mouth and interior of the vessel would be limited, and a reducing action, resulting in the production of black oxide of iron, seems possible. At the same time the air would have free access to the outside of the body of the vessel, and there red oxide could be formed. This explanation may now be considered.

The writer, in addition to a superficial examination of a very large number of museum pieces, has carefully examined various other specimens of ancient Egyptian (including Nubian) black-topped pottery,[3] with the following results :—

(1) The outer surfaces, except the rims, were red (various shades)[4] and polished. This red in most instances, though there were a few exceptions, was an extremely thin applied coating (slip or wash) beneath which was a layer of a different shade of red, the latter varying in thickness from about 0·5 millimetre to generally about 1·5 millimetre, but occasionally more, and below this the ware was black, the inner surface being also black and polished. In the case of the exceptions referred to, there was no difference of colour between the outer surface and the ware immediately below and there was probably no slip. It is, however, often difficult and sometimes impossible, unless there is a considerable difference of material or colour between the surface layer and the body of the ware beneath, to distinguish between an applied slip or wash and the thin layer of fine clay distributed uniformly over the surface by the potter when smoothing the pot with his wet hand, and the very fineness of this material may cause it to have a slightly different shade of colour from the rest of the clay, and much that is usually regarded as slip is not an applied slip in the true sense of the term. The total thickness of the ware varied from about 2 millimetres to about 10 millimetres. The tops of the vessels were black throughout and polished on both surfaces. In the case of some of the Badarian

[1] W. M. Flinders Petrie, *op. cit.*, pp. 130, 131. W. M. Flinders Petrie and J. E. Quibell, *Naqada and Ballas* (1896), p. 37.

[2] L. Franchet, *Céramique Primitive*, pp. 84–5. E. J. Forsdyke, "The Pottery called Minyan Ware," in *Journ. Hellenic Studies*, xxxiv (1914), pp. 137, 139. H. Frankfort, *op. cit.*, i, p. 10; ii, p. 64. H. S. Harrison, *Pots and Pans* (1928), p. 49.

[3] Three predynastic Egyptian vessels kindly supplied by Mr. Rex Engelbach; two pieces of early dynastic ware and six pieces of later ware from Nubia kindly supplied by Mr. C. M. Firth; and twenty-six specimens, chiefly of Badarian ware but with a few predynastic pieces, kindly supplied by Mr. Guy Brunton.

[4] The red colour, whether bright red, purplish red, or other shade, is due to oxide of iron, the colour of which varies with the nature of the compound from which it is produced and with the degree of heat employed in its formation, and is also modified by the nature and amount of any admixture.

pots the black polish had often a grey sub-metallic appearance strongly suggestive of graphite.[1] The greater part of the substance of the ware, therefore, was black, and only a comparatively thin layer of part of the outer surface of the body of the vessels was red. The exceptions to the above were the two predynastic vases and two of the Badarian specimens. One of the former and one of the latter differed by having a thin drab wash over the black inner surface, except for the rim, while in the case of the second predynastic vase the substance of the ware below the red wash, and, except for the top, but including the inner surface, was brown and not black. The second of the Badarian specimens had a dark brownish-red inner surface, except at the rim, though the substance of the ware was black.

(2) When the black part of the ware was heated in a Bunsen flame with free access of air the black colour entirely disappeared, and the material became reddish or reddish-brown throughout, which suggests that the black may have been due to carbon or carbonaceous matter, but does not prove this, since a black colour produced by the reduction of red oxide becomes red again under similar conditions. The same phenomenon in connection with ancient black pottery has been noted by Doulton,[2] Lisch,[3] and Whitfeild,[4] the latter two of whom both attribute it to the burning away of carbonaceous matter.

(3) The powder obtained by scraping the black part of the ware contained tiny particles that were slightly magnetic; the red, except in two instances, was also slightly magnetic, and in several cases it was more magnetic than the black. Franchet notes the same phenomenon.[5] This magnetic material, which was probably magnetic oxide of iron, was not nearly in sufficient quantity to account for the black colour and, as it is a very common constituent of Egyptian clays, it was probably original to the material and had not been produced by any chemical reduction of red oxide during firing.

(4) The black gave good tests for carbon: the red gave negative results. Pollard also found carbon as the colouring matter of Nubian black-topped pottery.[6]

The significance of the facts mentioned may now be discussed, but before doing so, the various oxides of iron and their modes of preparation may briefly be considered.

Oxide of Iron.

There are three oxides of iron, ferrous oxide (protoxide), ferric oxide (peroxide, sesquioxide), and ferrous-ferric oxide (ferroso-ferric oxide, triferric tetroxide,

[1] *See* p. 119.
[2] *Troja* (H. Schliemann, 1884), p. 33.
[3] *Ilios* (H. Schliemann, 1880), p. 219.
[4] B. W. Whitfeild, Asst. Chemist, Sudan Government, in *MS. note* to J. W. Crowfoot.
[5] L. Franchet, *Rapport sur une Mission en Crète et en Egypte*, p. 92.
[6] W. B. Pollard, in *Cairo Scientific Journ.*, vi (1912), pp. 72–6.

magnetic oxide, magnetite), which in composition, as its name indicates, is intermediate between the other two and is magnetic.

Ferrous Oxide.—This has a black colour and is extremely unstable, on account of which latter property it is not found free in nature, and usually when ferric oxide or other oxide of iron is heated in a reducing atmosphere it is metallic iron and not ferrous oxide that is formed. This oxide, however, may be produced by heating ferric oxide in a current of hydrogen to about 300° C.,[1] and by heating ferric oxide to a high temperature (700°–1,000° C.) in an atmosphere of hydrogen and steam.[2]

Ferric Oxide.—This oxide varies in colour according to whether it is crystalline, massive, or earthy, and also whether it is anhydrous or hydrated. The only forms, however, that need be considered in this connection are those that occur in clay and pottery, which are usually the brown or yellow hydrated oxide in clay and the red anhydrous oxide in pottery, the two former of which on heating lose their combined water and become converted into the latter.

Magnetic Oxide.—This is the commonly occurring black oxide of iron: it is formed when steam is decomposed by red-hot iron,[3] and when ferric oxide is intensely heated, this latter being stable up to about 1,350° C., when it is converted in part into magnetic oxide.[3]

The nature of iron compounds occurring in clay and pottery (or other material) is frequently misapprehended on account of the inexact manner in which chemists and others refer to them. Thus, when ferrous oxide is mentioned, what is often meant is not the free oxide, but a ferrous compound that for the sake of convenience and in order to indicate its composition may be regarded as consisting of this oxide combined with some other substance, such, for instance, as silica, but in which the oxide has lost its separate identity, the real body present in the example given being ferrous silicate. Such language, although understood by chemists, may seriously mislead others, and when it is stated that the colour of certain pottery is due to the presence of ferrous oxide, it is sometimes difficult to know whether what is really meant is ferrous oxide or a ferrous compound such as the silicate.

It is sometimes stated that the black colour of certain ancient black or black-topped pottery is due to a reduction of ferric oxide to ferrous oxide during the firing.[4] On theoretical grounds alone this is most improbable, though a change from the red ferric oxide to a dark bluish-grey ferrous compound may be produced under laboratory conditions by heating red pottery in an atmosphere of hydrogen.[5]

[1] T. Turner, in *A Dict. of Applied Chemistry* (Sir Ed. Thorpe), iii, 1912, p. 175.

[2] Roscoe and Schorlemmer, *A Treatise on Chemistry*, ii (1913), p. 1218.

[3] T. Turner, *ibid.* Roscoe and Schorlemmer, *op. cit.*, pp. 1220, 1222.

[4] H. Frankfort, *op. cit.*, i. p. 10; ii, p. 65, n. 2; p. 141, n. 2. E. J. Forsdyke, *op. cit.*, pp. 137–9. L. Franchet, *Céramique Primitive*, pp. 21, 34, 84, 85, 136.

[5] J. L. Myres, "The Early Pot Fabrics of Asia Minor," in *Journ. Anthrop. Inst.*, xxxiii (1903), p. 369, apparently quoting experiments by Doulton. B. W. Whitfeild, in *MS. note* to J. W. Crowfoot.

Thus, the temperature of 300° C., which is that at which ferrous oxide may be formed, is considerably below the temperature at which pottery is fired, since it is not until about 500° C. that clay loses its combined water and changes from being a plastic or potentially plastic material to being hard and permanently non-plastic. Also, the atmosphere surrounding pots fired in a primitive manner is not an atmosphere of hydrogen at any time, although it may momentarily contain a small proportion of hydrogen at the lower temperatures, neither is it an atmosphere of hydrogen and steam at high temperatures. Ferrous oxide, too, even if formed, could not continue to exist unless kept in a reducing atmosphere, but would at once combine with silica or be converted into the ferric state. Even if ferrous silicate and not ferrous oxide is meant, the formation of this under the ordinary primitive conditions of firing pottery is most improbable. Franchet states that Debray obtained ferrous oxide by passing a mixture of carbon monoxide and carbon dioxide over heated ferric oxide.[1] This is not referred to by any of the modern authorities dealing with the oxides of iron, but in any case there is no parallel between such a laboratory experiment and the conditions existing when pottery is fired in a primitive manner, although ferric oxide and small proportions of both the monoxide and dioxide of carbon may all be present at one stage or another of the firing.

The Staffordshire blue brick is sometimes quoted as an example of the reduction of ferric oxide to ferrous oxide,[2] but since the colour is *blue* and not black and is not due to ferrous oxide, though probably to ferrous silicate, its formation cannot be any proof that the colouring agent of *black* pottery is either ferrous oxide or ferrous silicate. Moreover, the Staffordshire blue brick is produced in a modern kiln where the air conditions may be regulated to a nicety, and where a reducing atmosphere may readily be both obtained and maintained, whereas the ancient pottery was fired in a totally different manner.

Foster[3] and Franchet[4] both attribute the black colour of the glaze on certain Greek vases to ferrous silicate, formed by the use of magnetic oxide of iron and an alkali, and Pollard considers the black glaze of an Egyptian vase of Ptolemaïc date to be similar.[5] These black glazes, however, have no relation to the black of the pottery now being considered.

Magnetic oxide, like ferrous oxide, is sometimes credited with being the cause of the black colour of certain black pottery,[6] but the literature of the iron oxides is silent with regard to any reduction of ferric oxide to magnetic oxide, such as would

[1] L. Franchet, *Céramique Primitive*, p. 34.

[2] E. J. Forsdyke, *op. cit.*, p. 140.

[3] W. Foster, "The Composition of some Greek Vases," in *Journ. Amer. Chem. Soc.*, 1910, pp. 1259–64.

[4] L. Franchet, *Céramique Primitive*, p. 109.

[5] W. B. Pollard, *op. cit.*, pp. 22–4.

[6] W. M. Flinders Petrie, *op. cit.*, p. 130; in *Cairo Scientific Journ.*, vi (1912), p. 67; *Diospolis Parva* (1901), p. 13. W. M. Flinders Petrie and J. E. Quibell, *op. cit.*, 12, 37.

be necessary if this explanation is correct, and the atmosphere during the firing of pottery in a primitive manner is not the highly reducing atmosphere sometimes suggested. As already stated, too, when any oxide of iron is heated in a reducing atmosphere it is usually metallic iron that is formed and not a lower oxide.

Before leaving the subject it may be pointed out that no evidence whatever is offered by the supporters of the opinion that the black of certain ancient black pottery is due to oxide of iron, whether ferrous oxide or magnetic oxide, or even to a black compound of iron such as a silicate, but that this opinion is merely an assumption rendered plausible by the facts that the oxides mentioned, as well as some of their compounds, are black; that reducing gases may be present during the firing of pottery; and that it is possible under certain special conditions in a laboratory to change the red of red pottery to a colour that is almost black. That any such reduction occurs, however, during the firing of pottery in a primitive manner has never been proved and is contrary to the available evidence. If black pottery may be produced by the carbonization of organic matter in the clay and by the action of smoke, and proof that it may undoubtedly be produced in both these ways has already been given, there is no need to introduce another form of blackening, which, though theoretically possible under certain special and highly artificial conditions, as in a chemical laboratory, has never been proved to take place under the natural conditions present during the burning of primitive pottery. Further, it may be proved that the black is not due to ferrous oxide (or other ferrous compound) by comparing a sherd in which the red oxide has been reduced in the laboratory by means of hydrogen[1] with a sherd of the original black. In the first place the colours of the two sherds are different, the former being a dark bluish-grey, while the latter is black, and in the second place the sherds behave very differently when treated with hydrochloric acid. Thus, the former (in a finely powdered condition) gives an immediate and vigorous action on the addition of the acid, and on continued treatment practically all the colour disappears, leaving a very light-grey (almost white) coloured residue, from which carbon and carbonaceous matter are manifestly absent, and, if the experiment has been carried out with due precautions against oxidation, the solution on testing is found to contain iron compounds in the ferrous condition. These are the normal results obtained by treating a ferrous compound with hydrochloric acid. In the case of the original black sherd, this, under identical conditions, shows no immediate or pronounced action on the addition of the acid, and even after prolonged treatment the residue remains black. There are no ferrous compounds in the solution and the black gives the tests for carbon.

[1] The specimen employed for the experiments was a small fragment of a piece of ancient black-topped ware that had been heated by Mr. B. W. Whitfeild until it turned red, and then reduced by means of hydrogen until dark bluish-grey. The writer is indebted for this to Mr. J. W. Crowfoot.

One instance of black pottery, the colour of which may have been partly due to magnetic oxide of iron and partly to a silicate of iron, is known to the writer, though the black was neither original nor intentional, but entirely secondary and accidental. The pottery in question consisted of a number of sherds found at the limestone quarries beyond Elwat el-Debbân (situated near the beginning of the Valley of the Tombs of the Kings, opposite Luxor). This pottery was originally the well-known red-ribbed ware of the Roman period, and had been used by the Coptic hermits, who made the ancient quarries their dwelling places. At some subsequent date a little of the broken pottery had been heated, probably accidentally, to such a high temperature that the edges of a number of pieces were fused, several pieces were fused together, and other pieces were fused to fragments of bricks. The pottery was very hard and was black throughout, but sherds of similar ware in the immediate vicinity, that had not been heated, were of the normal brownish-red colour. On chemical analysis, carbon and carbonaceous matter were proved to be absent, as was only to be expected after the high temperature to which the sherds had been exposed, but when the material was reduced to the condition of a fine powder this was found to contain magnetic particles, almost certainly magnetic oxide of iron, possibly produced from the red oxide of the original pottery by the intense heat to which it had been exposed.

Conclusion.

If the ancient black-topped pottery be regarded as essentially black ware, having merely the greater part of the outer surface red, as it certainly is, since the bulk of the substance of the ware is black, the problem of the coloration presents fewer difficulties. Thus, almost certainly the pottery first made by the early Egyptians was produced from the ordinary clay deposits occurring near the river. All this clay contains organic matter and iron compounds, including a very small proportion of magnetic oxide, and, when heated, the former blackens and only burns away if the temperature and air-supply are sufficient, while the latter, except the magnetic oxide, become converted into red oxide. Any additional organic matter in the form of chopped straw or animal dung added to the clay would behave in the same manner as that originally present. If it be assumed that the early pottery was fired as a mixed heap of pots and fuel, either simply on the ground or covered to form a primitive furnace, using as fuel animal dung, chopped straw, or other similar material, which is a most likely supposition; and if it be assumed, too, that the vessels were placed upside down for firing, which, on account of the shape of many of them, must have been almost necessarily the case, then, if there was only one layer of pots, the rims would eventually become buried in the ashes produced from the fuel, or, if more than one layer, then the rims of the lowest layer would be so buried. Fired in this manner, the portions of the vessels most exposed

to the heat and air, and which in consequence would burn red, would be the outer surfaces, except that of the buried rims, while the substance of the ware, the inner surfaces, and the buried rims, being protected from the extreme heat and the full air-supply, would become black, not only owing to the carbonization of the organic matter present, but also from the smoke and possibly tarry matter from the fuel. Thus, if there was only one layer of pots, a black vessel having a red outer surface, except for the rim, would result, while, if more than one layer, this would apply to the lowest layer only, and the pots in the upper tiers would be without black rims, and, in some cases, possibly also without black inner surfaces. This explanation, therefore, accounts for most of the facts in the simplest manner: it accounts for the red outer surface, the black of the body under the red, the black inner surface, the black rim and the carbon found on analysis. There remain, therefore, only the red wash and the polish to be explained. The former is a thin coating of red ochre, such as is very commonly used on modern Egyptian pottery. This much is certain: but at what stage were the red wash and the polish respectively applied? In modern pottery the wash is generally given after firing, but in the case of the pottery under consideration there seems good reason to suppose that it was done before firing. Thus, the line of demarcation between the red of the body and the black of the rim is, as a rule, much too irregular to have been the intentional edge of an applied colour, and can best be explained by supposing it to represent the depth the rim was buried in the ashes,[1] the surface of which would rarely be level or of uniform density (*i.e.* uniform porosity to heat and smoke). If this explanation be correct then the black must be later than the red. This is confirmed by the apparent extension of the red under the black in a number of cases, though the true sequence of two colours is not easy to determine, the stronger colour generally appearing to be uppermost, whether such is the case or not. It appears probable, therefore, that after the vessels were made and dried, the whole of the outer surfaces, including the rims, and also a small portion of the inner surfaces from the edge downwards, were coated with a wash of red ochre, and the pots then possibly polished and finally fired. The firing, as previously stated, would almost necessarily be done with the pots upside down and the rims buried, or, if more than one layer, then the rims of the lowest layer only would be buried. The red wash would not appreciably diminish the amount of heat reaching the substance of the ware immediately below, though by filling up the pores of the pottery it would reduce the amount of air gaining access. Some air, however, would penetrate, and for a short distance inwards from the surface the organic matter would be burnt out and the iron compounds would be converted into red oxide. The interior of the substance of the ware, the inner surfaces and the buried rims, being protected from the full heat and air supply, would be blackened by the carbonization of the organic matter and by smoke, especially the latter in the case of the inner surfaces and the buried rims,

[1] First suggested by Professor Sir W. M. Flinders Petrie.



[*Photo Fr. Borle.*

KRAAL DES BŒUFS DU CHEF PAÏEN MAAGHE, PRÈS SHILUVANE.

(*Le Chef Maaghé.*)

LA SECONDE ÉCOLE DE CIRCONCISION CHEZ LES BA-KHAHA.



ENTRÉE DU VILLAGE DE MAAGHÉ, PRÈS SHILUVANE.

LA SECONDE ÉCOLE DE CIRCONCISION CHEZ LES BA-KHAHA.

FIG. 1.

ÉLÈVES EN COSTUMES D'HERBE, ENTRE EUX, LEURS CONDUCTEURS.

FIG. 2. [*Photo Bedford.*

LA SECONDE ÉCOLE DE CIRCONCISION CHEZ LES BA-KHAHA.

and this smoke would cover up and mask the red wash. That smoke will blacken a red surface has been proved by the experiments already described.[1] Thus, in the simplest manner and without any complication of double firing, the coloration of the ancient pottery may be accounted for.[2] There still remains, however, the polishing of the black parts of the pots to be explained, especially the very high polish of some of the inner surfaces. This, it is suggested, was produced after firing by rubbing with a pebble or other smooth hard surface, either with, or more probably without, the use of a little oil: and the finer-grained and more plastic the clay used, and the more the surface of the vessel had been smoothed by the wet hand of the potter during making, or polished before firing, and the larger the amount of soot deposited on the surface, the higher would be the final polish. The polish, too, might be enhanced by the use of graphite in certain cases.

[1] *See* p. 119.

[2] Mr. J. W. Crowfoot has suggested to the writer that the black of the rims was possibly produced as a secondary operation, by placing the pots mouth downwards with the rims buried in chopped straw or similar fine vegetable material while still hot from the furnace, when the rims would be blackened in the same manner as the entire surface of the pots is now blackened in the Sudan and on the Gold Coast, as already described.

LA SECONDE ÉCOLE DE CIRCONCISION CHEZ LES BA-KHAHA DU NORD DU TRANSVAAL.

[Avec Illustrations XI–XIII.]

Par Henri A. Junod.

Les rites d'initiation de la puberté ont été pratiqués de temps immémorial chez les Bantus du Sud de l'Afrique. On les désigne communément par le terme : école de circoncision. C'est peut-être une erreur, car l'opération physique en question, bien qui jouant un grand rôle, est loin de constituer le seul élément de ces rites compliqués. Au reste les différences sont très grandes d'une tribu à l'autre. J'ai pu m'en rendre compte facilement à Shilouvane, la station de la Mission Romande dans laquelle j'ai demeuré plusieurs années et qui se trouve au Nord-Est du Transvaal, dans une des vallées du Drakensberg, pas loin de Thabina. Deux groupes ethniques habitaient côte à côte au pied de la montagne dite Mamotswiri (le Kranzkop des Boers), à savoir les Ba-Nkuna, un des clans de la tribu Thonga, et les Ba-Khaha, un clan des Ba-Pedi, les premiers possesseurs du pays, qui sont des Ba-Suto. Tous possèdent les rites d'initiation, mais ils sont beaucoup plus développés chez les Ba-Khaha que chez les Ba-Nkuna. Chez ceux-ci, en effet, l'école n'a lieu qu'une année. Elle commence par la circoncision et se termine après trois mois de réclusion et d'épreuves par la réintégration des initiés au sein de la communauté où ils appartiendront désormais à la classe des hommes adultes. J'ai décrit la série de ces rites dans la première partie de la nouvelle sudafricaine *Zidji*, et dans *The Life of a South African Tribe*, 2me ed., vol. I. pp. 71–94. Les Ba-Khaha ont aussi cette école-là et l'appellent *Budiya*. Mais elle est suivie d'une autre, l'année suivante, qu'on nomme *Buhwira* et qui dure beaucoup plus longtemps. Dans certains clans il en existe même une troisième, moins longue, moins pénible, dite *Gomana*, la petite école. La seconde est peut-être la plus importante des trois.

J'ai eu l'occasion de la voir fonctionner, pour autant que cela est possible à un blanc non initié, car tous ces rites sont environnés d'un grand mystère. C'était en l'année 1905. J'avoue que si j'avais dû me contenter de ce que mes yeux ont vu, je n'en saurais pas dire grand chose : mais j'ai obtenu des renseignements circonstanciés d'un de mes élèves qui avait passé par ces différentes écoles et qui ne m'a rien caché. Au même moment avait lieu l'initiation des filles, qu'on appelle le

Balé. Il est beaucoup plus difficile de savoir en quoi elle consiste, car les hommes de la tribu l'ignorent et le sujet est trop délicat pour qu'on puisse interroger les femmes librement.

* * * * * * *

Le *village de Maaghé*[1] le chef des Ba-Khaha, offrait un grand intérêt à ce moment-là. Maaghé lui-même s'était converti au christianisme, mais il ne croyait pas que cette école fût incompatible avec sa nouvelle foi, comme on le verra plus tard, et son grand conseiller Mavuché, l'homme de la tradition, présidait à l'accomplissement des rites avec un soin scrupuleux. J'ai cherché à donner une idée dans le croquis ci-joint (Texte-fig. 1) de l'aspect de la capitale des Ba-Khaha durant les huit ou neufs mois que dura la *Buhwira*. Ce village est adossé contre la colline. On y accède par un large chemin qui traverse la zone de taillis qui entoure la capitale de plusieurs côtés. Ces taillis impénétrables, formés d'arbustes papillionacés épineux, sont une protection très efficace contre les ennemis. A l'entrée on passe entre deux rangées de perches qui forment la grande porte. Elles sont bien polies, appointies, et plusieurs d'entre elles sont surmontées de cornes ou couronnées de figures grossièrement sculptées représentant des visages humains ou des animaux. Ce sont les chefs de villages qui les ont fournies pour embellir la résidence royale. Le chemin débouche dans la grand espace libre où les hommes se réunissent pour discuter les affaires : au-délà on monte aux appartements de Maaghé qui, étant grand ami du progrès, s'était bâti une maison carrée laquelle domine tout le village. A droite de la place centrale se trouve la *cour du Balé* circonscrite par des perches énormes d'au moins six mètres de hauteur, dressées en cercle et réunies par une palissade formée de gerbes de roseaux empilées les unes sur les autres jusqu'à une hauteur de deux mètres environ. Au sommet de l'une d'elles à l'arrière, trône un quadrupède sculpté enfoncé par le milieu du ventre sur ce piédestal. On dirait un castor, mais l'intention de l'artiste a été sans doute de représenter l'antilope *phudi*, le duiker des Sudafricains, qui est le totem de la tribu Khaha. On pénètre dans cette cour par un couloir tortueux qui ne permet pas aux spectateurs du dehors de voir l'intérieur. L'initiation des filles, elle aussi, se poursuit dans le mystère. Mais elles vont et viennent plus librement que les garçons et portent en bandouillère, à droite et à gauche, de grosses ficelles qu'elles garderont pendant tout le temps de leurs épreuves.

De l'autre côte de la place, faisant face à la cour du Balé se trouve l'enclos des bœufs et, au dessous, l'établissement de la *Buhwira* où demeurent les circoncis. C'est d'abord une grande cour construite comme celle du *Balé* avec des perches qui soutiennent une clôture de gerbes de roseaux superposée les unes aux autres. J'ai fait mine un jour de penétrer à l'intérieur par le couloir tortueux. Le préposé aux

[1] Le village est actuellement détruit. Le clan des Ba-Khaha a déménagé dans la vallée voisine et a perdu beaucoup de son importance

rites de l'initiation m'en a poliment empêché, mais je sais par mon informateur que cette cour, appelée *murudju*, contient une grande hutte où couchent les initiés et les quelques hommes qui les surveillent plus spécialement. Ces derniers s'étendent sur une sorte de lit construit à leur intention derrière la grande perche qui se dresse au centre de l'édifice et qui dépasse le toit. Quant aux garçons, ils dorment par terre, sur les sol brut où abondent d'affreux vers blancs qui les piquent pendant la nuit.

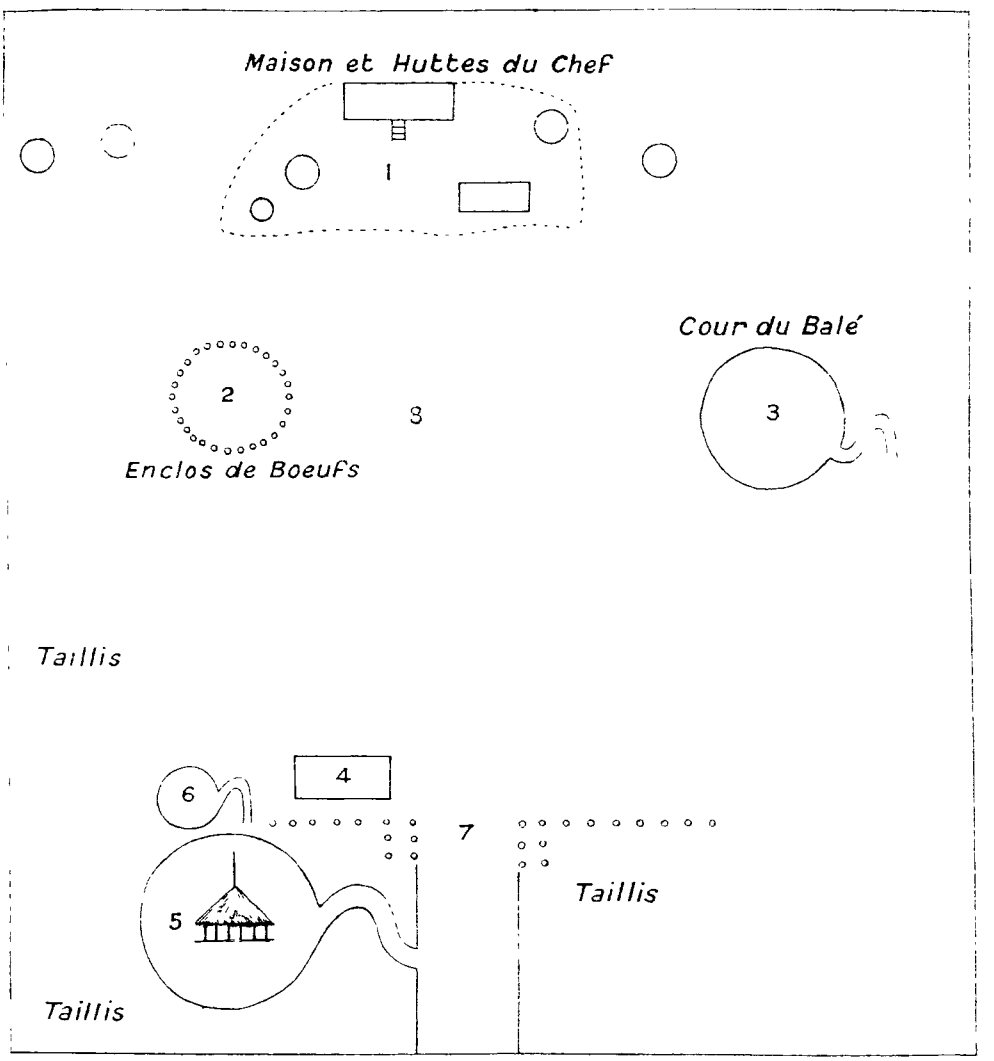


FIG. 1.—PLAN APPROXIMATIF DE LA CAPITALE DES BA-KHAHA DURANT L'ÉCOLE DE LA BUHWIRA, JUIN 1905 À MARS 1906.

1. Maison et huttes du chef. 2 Enclos des bœufs. 3. Cour de l'initiation des filles (*Balé*). 4. Hangar du wagon. 5. Cour de l'initiation des garçons (*murudju*). 6. Cour de la Bête (*Silwana*). 7. Porte du village et barrière. 8. Place publique.

Tout près du *murudju*, voici une seconde cour beaucoup plus petite. C'est la demeure de la Bête qui joue un grand rôle à la fin de l'école et dont les rugissements plongent les femmes et les enfants dans l'épouvante !

* * * * * * *

Et maintenant décrivons par ordre les rites très compliqués de la *Buhwira*. On peut y distinguer cinq phases : la période de préparation, les cérémonies de l'ouverture de l'école, la vie journalière durant les mois de l'internement, l'arrivée de la Bête et ses diverses interventions et enfin la fête de clôture.

I.—LA PÉRIODE DE PRÉPARATION.

Au mois de mai, première convocation des hommes de la tribu au village du chef. Mavuché, le grand conseiller leur dit : "N'y a-t-il pas chez vous des *mahaula* (des êtres incomplets, imparfaits) ? Il faut qu'ils passent par la *Buhwira*. Allez couper le *muledji*." Ces être incomplets, ce sont les circoncis qui n'ont encore subi que les épreuves de la Budiga, l'année précedente. Il s'agit de les perfectionner par celles qui vont commencer. Le *muledji* c'est un arbuste papillionacé appartenant au genre Indigo, je crois, qui a des tiges très droites, ligneuses, d'environ un mètre de haut. Quand on a râclé l'écorce, on trouve un aubier très blanc formé de fibres très solides. Les chefs de famille retournent chez eux et les circoncis vont couper des tiges en grand nombre dont ils font des tas dans leurs villages.

Seconde convocation à la capitale. Le chef donne aux pères des circoncis l'ordre de préparer les ficelles. Les écorces sont pelées et les ficelles obtenues en enroulant les unes avec les autres les fibres du *muledji* à la manière noire, c'est à dire en mettant plusieurs d'entre elles à côté les uns des autres sur la cuisse et en les poussant en avant avec la paume de la main, de manière à les tordre les unes avec les autres. Chaque candidat se prépare ainsi, cinquante, cent bouts de ficelle d'une dizaine de mètres de longueur en ajoutant les fibres bout à bout. Un mois se passe à la fabrication de ces ficelles.
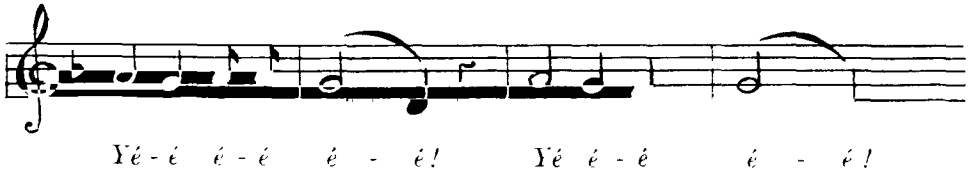
Troisième convocation au village du chef. Cette fois tous les hommes du pays sont convoqués et les *mahaula* s'y rendent aussi. Aux abords du village l'emplacement du *murudju*, de la cour des circoncis, a été préparé. C'est là qu'on se réunit et non plus sur la place centrale. L'ordre est donné à toute la population masculine de couper la grande graminée dite *lethokwa* avec laquelle seront confectionnés les masques. Cette herbe, quand elle est sèche, fournit des pailles d'un quart de centimètre de d'épaisseur et d'une belle couleur jaune clair. A ce propos les candidats vont passer par une première épreuve. Dans la brousse, loin de tous regards profanes, quelques hommes ont préparé avec cette herbe certains objets qui ressemblent aux bracelets que porteront les initiés et qui paraissent être le symbole de l'art de tresser. On les appelle *mukwaha*. Ils sont suspendus au nombre de cinq à un arbre sur la place du *murudju*. Les hommes se disposent en deux

rangées, se faisant face les uns aux autres et tenant des verges à la main, et on dit aux candidats : " Aujourd'hui vous verrez une chose que vous n'avez encore jamais vue ! Passez entre les deux rangées et regardez plus loin cette chose blanche qui pend à l'arbre. Élancez-vous vers elle et allez la prendre." Tandis qu'ils courent entre la double haie des hommes, ceux-ci les rossent de coups. C'est ce qui s'appelle " aller décrocher les rayons de miel." Les jeunes gens de race royale passent les premiers, puis les moins nobles et enfin les vilains.

Ce rite de flagellation se rencontre déjà au commencement de la première école. Il semble être un rite typique de séparation, séparation d'avec la phase de vie antérieure, après quoi viendre la période de marge, de réclusion, puis l'aggrégation à la société nouvelle, selon le rhythme bien connu des rites de passage. (Voir plus bas.)

Rentrés dans leurs villages, les garçons se mettent à couper en grand nombre les tiges de la *lethokwa*. Ils déposent leurs gerbes dans le *murudju*, à l'abri des yeux profanes. De petits emplacements analogues sont aménagés dans les principaux centres de population, à Pangamati, Silodulé, Libagen, car le clan Khaha est dispersé sur une superficie considérable, cinquante à cent kilomètres carrés, et il serait impossible aux candidats d'apporter leur récolte à la capitale tous les jours. Très tôt le matin, avant le chant du coq, ils vont frapper des mains derrière la porte des huttes où dorment les hommes. S'ils négligent d'aller les réveiller, les hommes ne viendront pas leur aider et le travail n'avançera pas. Il s'agit de couper les pailles en bouts de quelques centimètres de longueur et de les coudre les uns aux autres très solidement de manière à en faire de longues bandes qui seront plus tard fixées les unes aux autres pour confectionner les masques. La préparation de ces bandes et de tous les matériaux nécessaires aux masques dure tout un mois, le mois de Juillet, et tout ce travail se poursuit dans le plus profond secret.

Pour bien s'assurer que nul profane ne se permettra de jeter un regard indiscret sur leurs occupations, les candidats, sous le conduite d'un ou de deux adultes, parcourent la campagne et poursuivent les passants en leur posant les questions de l'initiation afin de voir s'ils sont circoncis. Cela s'appelle *firisa*. Les garçons les abordent ne leur disant : " Donnez-nous les formules." L'individu ainsi mis en demeure, s'il est un initié, répondra en marmottant sur un ton chantant une des formules caractéristiques de l'école, par exemple : La bête des champs—le porc épic aux épines—il m'a transpercé avec ses épines noires et blanches, resplendissantes—les épines qui servent à transpercer la petite oreille. A chaque membre de phrase les circoncis répondent par le refrain suivant :



Si le passant est incapable de réciter sur le coup une formule, c'est qu'il n'a pas suivi les écoles de la circoncision et n'en connait pas les secrets. Il sera mis à l'amende et devra remettre à la troupe ce qu'il a en mains, son bâton ou une poule, un bracelet. Si par contre il a passé victorieusement par l'épreuve, c'est lui qui a le droit de poser la même question aux *mahaula*, et si ceux-ci ne lui répondent pas immédiatement en prononçant correctement une autre formule, alors il lui sera permis de les battre.

Au reste durant toute la cueillette des pailles et la préparation des masques, les candidats sont déjà soumis à une règle de vie assez sévère. D'abord l'usage de la bière leur est formellement interdit. Puis, le soir, un coup de sifflet les appelle sur la place du village et on y fait la répétition des formules. Un homme qui les connait particulièrement bien les récite les unes après les autres et les garçons, s'ils les ont bien comprises, répondent par le refrain habituel : " *Yé-é, é-é-é !* "

Puis chacun d'eux est appelé à son tour à les répéter. Ils doivent se tenir debout sur une jambe, l'autre jambe repliée en arrière, les bras croisés. S'ils posent le second pied par terre, s'ils se trompent dans la suite des paroles, ils sont battus. Si l'un d'entre eux se montre particulièrement incapable, on l'envoie prendre un charbon ardent dans le feu et il doit se promener dans le cercle des assistants en se brûlant les doigts, tandis que tout le monde lui crie : " De qui es-tu la hyène ? " Il doit répondre en donnant le nom de son frère ou de sa sœur : " Je suis la hyène de tel ou tel."

Pendant les courses à la recherche des pailles on organise parfois de petites expéditions de chasse et il arrive qu'un des jeunes garçons réussisse à lancer son bâton contre un oiseau et le tue. Alors il l'entoure d'herbe, fait un paquet qu'il exhibe le soir au moment de la répétition des formules, sur quoi on les licencie et ils pourront aller dormir plus tôt que d'habitude.

La période de préparation approche de son terme. Les bandes de pailles sont en nombre suffisant. On tresse la ceinture aux projections triangulaires sur mesure pour chaque candidat, œuvre particulièrement difficile, puis la queue, la jupe crinoline en herbe très solide, la ceinture qui tient cette jupe et les bracelets de paille, sorte de manchettes pour les biceps, les avant-bras et les mollets, six en tout. Lorsque tout cela est terminé, dans le *murudju* central et dans ceux de la périphérie, le chef en est averti et il fix alors le jour de l'ouverture de la *Buhwira*. La bière est préparée dans tous les villages et les hommes se réunissent à la capitale, prêts à boire beaucoup et à s'amuser fort. Quant aux *mahaula* ils ne tremperont pas leurs lèvres dans les pots de bière. On ne leur donnera que de la vulgaire bouillie de maïs.

II.—L'OUVERTURE DE L'ÉCOLE ET LA CONFECTION DES MASQUES.

En secuto on ne dit pas l'ouverture, mais la sortie de la *Buhwira*. C'est en effet le jour où les candidats *sortent* de leurs villages pour venir demeurer dans la cour

qui leur a été préparée à la capitale. Ils arrivent apportant avec eux tout le matériel des masques. On le sconduit d'abord près du ruisseau. Deux hommes ont modelé en terre glaise une figure qui doit représenter un crocodile, et les *mahaula* doivent aller " voir le crocodile." L'un après l'autre passe, regarde l'objet et les hommes les rouent de coups. Que signifie ce rite ? Mon informant ne me l'a pas dit. Il représente en tous cas un pas en avant dans l'initiation toujours accompagnée de souffrance.

Ce premier jour passé dans le *murudju* central est aussi consacré à la fabrication du petit masque, le *leswili* dont nous allons parler tout de suite. Dès le lendemain on se met à la construction de la cour du *murudju* décrite plus haut et de la hutte centrale où dormiront les initiés. Cette hutte n'a pas de mur. Elle est portée sur des perches, non reliées entre elles et recouverte d'herbe mal arrangée, à peine fixée au toit. Derrière la perche centrale qui s'élève bien au dessus de la hutte, on dispose un lit de perches pour les surveillants et les candidats de la famille royale. Ce sont les filles du *Balé* qui coupent les roseaux qui entourent la cour du *murudju*, laquelle ressemble à celle du *Balé*. (Voir le croquis.)

Durant les jours suivants les jeunes garçons et les hommes se mettent activement à la *confection des masques*. Il y en a deux, le petit, appelé *leswili*, et le grand, appelé *nasu*. C'est un travail difficile qui exige beaucoup de soin. Le *leswili* est plus simple. Il se compose de deux parties démontables et n'occasionne aucune douleur à celui qui le porte. La partie supérieure est un casque qui enserre la tête et qui est couvert lui-même d'une peau de lapin ou d'une masse de plumes. De là partent quatre faisceaux de pailles regardant en avant et formant une sorte de bec avec des interstices au travers desquels le candidat peut bien voir. Sur ce casque sont piqués quelques petits bâtons dressés en l'air et ornés de plumes à leur extrémité. La partie inférieure consiste en bandes de pailles qui plaquent sur les épaules, le dos, la poitrine, et que l'on peut relever de manière à libérer le bas du visage, ce qui permet au candidat de manger sans ôter le casque. Le *leswili* est le costume de petite tenue que l'on porte aux alentours de la cour. Mais il est interdit de la mettre pour aller faire visite au village. Il arrive qu'un petit garçon n'ait pas pu réunir assez de ficelles et de bandes pour fabriquer le *nasu*. Alors on ne lui fera qu'un *leswili* et il devra rester tout le temps de l'école au *murudju* sans jamais retourner à la maison. On se moquera de lui en l'appelant *chokoturane*, un mot insultant pour designer l'initié qui n'est pas parfait.

Le *nasu* est le véritable, le typique costume de la *Buhwira*. Je dis costume et non pas seulement masque, car il couvre tout le corps ainsi que le montre l'illustration qui accompagne ces lignes. La jupe, la ceinture, la queue sont relativement faciles à tresser : mais la partie supérieure qui enferme la tête et la poitrine et qui descend jusqu'aux hanches est une œuvre de longue haleine. On y ménage seulement deux petites ouvertures par lesquelles le candidat peut tout juste voir son chemin devant lui, mais rien ni à droite, ni à gauche. Le *nasu* est très lourd,

très incommode. On n'y entre et l'on n'en sort que très difficilement et avec l'aide d'une autre personne. De plus les ficelles qui cousent les unes aux autres toutes ces pailles sont grossières. Elles ne tardent pas à blesser la peau. Aussi le port du *nasu* cause-t-il au bout d'un certain temps une réelle souffrance. "C'est le grand *goma*," la grande épreuve ! Mais aussi, dans cet accoutrement, le candidat à l'initiation est splendide ! Il ressemble à un bête féroce dont la queue pend par derrière et dont le front est invulnérable. Il est vraiment un surhomme.

III.—LA VIE JOURNALIÈRE À LA COUR DE LA BUHWIRA.

Pendant les six mois que durera l'école, les candidats affublés de leurs marques sortent tous les matins pour exécuter leurs danses spéciales et leurs chants sur une place aménagée aux abords de la capitale. Ils dansent lentement. A chaque mouvement un peu brusque, le *nasu* les blesse. Ils chantent, mais leur chant est souvent accompagné de larmes. C'est ainsi que leur courage viril se manifeste. C'est le centre de leur vie d'initiation. L'un des principaux refrains de leur répertoire est le suivant : "Je suis entré pour chanter les chants de l'école."

Un autre que j'ai pu noter un jour, alors que j'assistais à un enterrement pas loin de la capitale (voir *Zidji*, p. 154), célébrait la mort, l'odeur de la mort :—



"*Nkani nka-ni yi-ni? I phu-lo wa li-hu.*"
"Qu'est-ce qui sent mau-vais ? C'est l'o-deur de la mort."

Les circoncis doivent se réunir une seconde fois le soir pour répéter les mêmes danses et les mêmes chants.

Durant la journée, il leur est permis de retourner chez eux, toujours sous leur masque pesant. Mais il leur est absolument défendu de parler avec les femmes et les non-circoncis qu'ils rencontrent sur le chemin. Si on leur adresse la parole ils répondent en sifflant. Arrivés au village ils peuvent se débarasser du *nasu*, mais ils doivent le faire dans le petit *muradju* où ils ont fabriqué les ficelles ou au milieu d'un taillis épais. Aucune femme ne doit savoir qui est celui qui se cachait sous l'animal terrible qu'elle a vu entrer au village. Et il ne faut pas s'attarder trop longtemps au milieu des siens. Celui qui arriverait trop tard pour la danse du soir serait battu. Celui qui se permettrait de coucher à la maison aurait à payer une amende d'un shilling ou à apporter de la bière aux surveillants comme indemnité.

La réclusion n'est donc pas aussi sévère durant la seconde école que durant la première où les nouveaux circoncis passent trois pleins mois loin des villages. D'ailleurs remarquez que la cour de la *Buhwira* est à la capitale même et non pas

dans la montagne ou dans la brousse, bien loin, comme c'est le cas pour la *Budiga*. Il faut noter aussi que la profusion de paroles obscènes qui distinguait la première école est moins marquée dans la seconde. Lorsque la nourriture est apportée par les femmes pour le repas du soir (celui du milieu du jour étant plus souvent pris par les candidats à la maison), elles ne sont pas accueillies par des bordées de paroles impures comme c'était le cas, l'année précédente, à la *Budiga*.

Certains travaux sont exécutés par les candidats pendant la journée. On leur donne à assouplir les peaux des bœufs du chef ; ils vont couper des perches pour ses femmes et même pour des tiers qui viennent les lui acheter. Le préposé à la surveillance de l'école les envoie aussi à la chasse une ou deux fois par semaine et toute la viande ainsi obtenue ira à Mavuché. Toutes les fois que la troupe sort pour la chasse ou pour couper du bois on endosse le *leswili* et pas le *nasu*.

On dit souvent que le temps de réclusion de l'école de circoncision est consacré à une instruction donnée aux candidats sur leurs devoir futurs vis-à-vis du chef, et comme membres adultes du clan. Il est possible que ce soit le cas dans d'autres tribus. Quant aux Ba-Nkuna et aux Ba-Khaha, mes informateurs ne m'en ont jamais parlé. Ils ne m'ont pas davantage mentionné d'acte religieux accompli à propos de l'initiation.

Au bout de quelques jours de cette vie pénible, les candidats sont appelés à un autre travail, et ils l'accompliront volontiers, car il leur annonce la fin de leurs épreuves. Ils vont confectionner le toit de la Bête.

IV.—L'arrivée de la Bête.

Les candidats reçoivent l'ordre de fabriquer une masse de ficelles que l'on trempe pendant quelque temps dans la vase pour leur donner une couleur noire. Ils apportent une quantité de bois mort dont on fera du charbon. Ils doivent aussi aller à la recherche de certains fruits durs d'une couleur orange, ceux d'un palmier ou dattier dit *malé*. Ils se procurent encore une certaine quantité de cire d'abeilles, assez pour en faire une grosse boule contre laquelle les fruits oranges sont collés. Les hommes, de leur côté, fabriquent un petit toit conique d'environ un mètre de diamètre, dont le faite est surmonté par un bâton. La boule orange est plantée dans ce bâton et fixée ainsi au sommet du toit minuscule. Le charbon est réduit en une poudre noire avec laquelle on enduit les ficelles et les bâtons du toit. Cet objet est mis à part dans un coin du *murudju* où il reste plusieurs semaines.

Une belle nuit quelques individus le prennent en grand secret et vont le cacher dans un fourré, du côté du ruisseau. Le lendemain tous les hommes de la capitale partent, et, parmi eux, il y a celui qu'on a choisi pour jouer le rôle de "*Selwana*," la Bête, et qu'on désigne sous le nom de *Musara*. Les hommes forts, les vieux initiés qui savent tout, vont chercher l'animal terrifiant qui demeure dans les abîmes des rivières et qui doit venir maintenant s'établir pour un temps dans la petite cour

qu'on a construite pour lui tout près du *maruleja*. Le cortège revient : le *Musara* accroupi sous le petit toit qui est la carapace de la Bête avance lentement sur le chemin qui monte du ruisseau à la capitale, se dérobant au milieu des hommes qui lui font la conduite. Il joue d'une petite flûte dont le son est particulier et au bruit de laquelle tous les sujets du chef sortent de leurs villages pour se joindre à la procession. Par une coïncidence extraordinaire je suivais précisément ce même chemin, un certain jour d'Octobre 1905, et je rattrappai le cortège de la Bête. Très intrigué, ne sachant pas du tout ce que signifiait cet attroupement, je désirais le voir de plus près. Mavuché vint à me rencontrer et me demanda d'un air ennuyé ce que je faisais là. Sans me laisser arrêter, je m'approchai, tandis que tous les hommes, paraissant très embarrassés, me faisaient front et s'efforçaient de cacher quelquechose. J'aperçus entre leurs jambes un objet orange, la tête de la Bête, et, remarquant qu'ils ne tenaient pas à ma présence, je m'éloignai, la procession me suivant en chantant une lente mélopée. Si je n'avais pas été un blanc, le missionnaire qu'ils savent être leur ami, j'aurais été battu d'importance pour cette indiscrétion d'ailleurs tout involontaire !

La Bête arrive à la capitale et se rend dans sa petite cour spéciale qui s'appelle le *siludu*. Les circoncis viennent l'un après l'autre la contempler. Il leur est donné de connaître le mystère, mais chacun d'eux doit payer deux shillings, ceux qui viennent de loin cinq shillings. Pour les femmes, les enfants, les incirconcis, la Bête demeurera un sujet d'épouvante. C'est le Croque-mitaine, le monstre des abîmes. L'individu qui joue ce rôle et qu'on paye spécialement pour cela est un maître dans l'art de terrifier. Quand il le veut, il quitte son toit et retourne chez lui, surtout quand il n'y a pas de clair de lune : mais il revient le soir, fait entendre sa petite flûte désormais bien connue. Alors les fillettes du *Balé* doivent se réunir en hâte sur la place publique pour y chanter leurs chants d'initiation. Les circoncis jouissent alors de quelque repos. Leur danse douloureuse est suspendue. La Bête répond de dessous son toit aux mélodies des filles. Elle dit : " Je veux que vous m'apportiez des os de giraffe (c.à.d du bois à brûler), des dents de Thongas (c.à.d du maïs dont les grains blancs ressemblent aux dents des Thongas qui ont introduit cette céréale dans le pays), de la moëlle de giraffe (c.à.d. les amandes au goût très fin des fruits de l'arbre dit *nkanye* [sclerocarya caffra]), etc. Et les femmes iront se procurer tout cela et l'apporteront pour la Bête qu'elles ne verront d'ailleurs jamais.

Durant les deux semaines qui suivent l'apparition de l'animal mystérieux la tribu toute entière est soumise à des règles très strictes. Il est défendu de faire du bruit dans les villages : interdit à un homme—même au chef—de battre sa femme : interdit aux cuisinières de râcler le fond de leurs marmites ; interdit de chanter et de s'enivrer. Si quelqu'un transgresse la loi, " *Seluana* " criera le soir le nom du misérable qui lui a " coupé le cœur " et il sera mis à l'amende. Et, pour maintenir la terreur chez tous les non-initiés, la Bête apparait de temps en

temps au milieu des gens, les soirs de lune, toujours cachée sous sa carapace et entre les jambes de ceux qui l'accompagnent et c'est alors un sauve-qui-peut général !

Mais le but ultime de cette singulière apparition, c'est de délier les cordons de la bourse. Ainsi terrifiés, les gens payeront plus facilement la finance due au chef pour l'école d'initiation. Alors le licenciement sera possible. Un beau soir la Bête, après avoir joué de sa flûte, ordonne de préparer de la bière partout. Elle se retire prudemment dans ses abimes les jours suivants ; puis lorsque tout le monde à bu abondamment, elle revient, appelle les parents des garçons et des filles et leur annonce qu'ils doivent payer au chef cinq shillings pour les premiers et dix pour les secondes, et cela sans tarder. Ceux qui le peuvent s'exécutent tout de suite. Mais beaucoup de parents n'ont rien et tardent des semaines, des mois peut-être à s'acquitter de leur dû. Ces retards provoquent de nouvelles apparitions de la Bête. Elle dit : " Tel et tel n'a pas encore payé ! Ce sont eux qui empêchent le licenciement de la *Buhwira* ! Hâtez-vous ! " Enfin les contributions sont rentrées. *Selwana* convoque de nouveau toute la tribu à la capitale et ordonne aux fillettes du *Balé* d'ôter les cordes qu'elles portent en bandouillière et qui représentent sans doute pour elles le temps de réclusion de la période de marge, comme les masques pour les garçons. Elles doivent aller chanter dans les villages les chants dits *malocé*. Aussitôt elles rasent leurs cheveux (rite de séparation d'avec la période de marge), s'ornent de perles et vont donner leurs concerts dans tous les villages du pays. Elles consacrent trois jours à la capitale, et cette tournée artistique dure un mois plein. A cette occasion chaque chef de village sort une chèvre ou dix shillings ou une livre sterling, et tous ces cadeaux vont au chef, à moins que la fille du chef ne soit au nombre des initiées, auquel cas elle peut donner la permission de tuer la chèvre et toute la troupe se régalera de la viande de l'animal. Pendant ce mois les *mahaula* travaillent encore dur dans leur cour, mais ils savent que la fin approche. Les fillettes reviennent. Leurs cheveux ont recommencé à croître. Elles doivent reprendre leurs cordelettes pour quelque temps encore jusqu'au jour de la clôture où elles seront rasées de nouveau. Ce sera alors l'aggrégation définitive.

V.—La clôture de l'école.

Pour la dernière fois la Bête ordonne de préparer de la bière, beaucoup de bière et, le jour qui suit la grande beuverie, fillettes du *Balé*, candidats de la *Buhwira*, hommes et femmes se rassemblent à la capitale et dansent toute la nuit. Interdit de s'arrêter, de se coucher, de dormir. Le refrain principal est celui-ci : " *O ! ya yana ya lela !* " ce qui ne signifie rien du tout. Cette nuit-là, les candidats osent pour le première fois " ouvrir la bouche," c'est à dire parler aux femmes et aux incirconcis. Ceux-ci leur demandent qui ils sont et ils peuvent dire leur nom. Au cours de la nuit, on entend encore une fois la petite flûte de la Bête. Le son s'éloigne

de plus en plus, dans la direction de la rivière. C'est *Selwana* qui retourne dans ses abîmes.

Au matin toute l'herbe qui était demeurée de reste après la confection des masques est apportée de tous les *murudju* locaux au *murudju* central pour la conflagration finale. Les pères de famille ont préparé pour leurs fils la ceinture fort réduite de peau dite "*musindu*," qui est le vêtement national des Ba-Suto du Transvaal. Ils devront s'en vêtir pour rentrer dans la vie civile. Mais auparavant il reste à accomplir la lustration finale qui symbolise l'enlèvement de toutes les souillures de l'enfance. Ils suspendent à la hutte du *murudju* leurs deux masques qu'ils ne porteront plus jamais et qui seront consumés comme tout le reste. Le feu, comme l'eau, signifiera le destruction de toutes les misères, de toutes les imperfections de l'enfance.

Après l'ablution au ruisseau, ils reviennent au *murudju* avec leur nouveau vêtement : portant en mains un joli bâton préparé pour l'occasion, il s'organisent en cortège, tournant le dos à la hutte de la *Buhwira* à laquelle on met alors le feu. Les roseaux et les perches de la cour du *Balé* ont aussi été apportés là pour l'incendie général. Le cortège se met en marche très lentement. Il est tabou, pour tous les initiés, de regarder en arrière vers la flamme qui consume tout leur passé. . . Les voici à la porte d'entrée de la capitale, les yeux tournés vers les appartements du chef, au dessus de la place.

Pour la cérémonie finale l'aggrégation solennelle des candidats, Maaghé avait convoqué ses missionnaires. J'ai donc eu l'occasion d'y assister le 2 Mars 1906, sans indiscrétion cette fois, et voici ce que j'ai vu : Nous étions assis sous la véranda du chef. Soudain Mavuché, le directeur de l'école, arrive en courant, au moment où la troupe des circoncis revenait du ruisseau. Il vient chercher un objet étrange, le drapeau de la tribu, un long bâton portant à son extrémité une sorte de pommeau, une demi-sphère de plumes d'autruches ramassées du milieu desquelles il en sort quelques autres plus longues qui flottent au dessus. "Cet objet-là" me dit Maaghé, "si nous sommes vaincus à la guerre, c'est le dernier dont nos ennemis s'empareront !" Mavuché le tenant haut élevé, va rejoindre le cortège. Nous le suivons jusqu'au milieu de la place. Parmi les circoncis quelquesuns n'ont pas fini de revêtir leur costume. Certains mettent des chemises blanches au lieu de la ceinture traditionnelle. L'un d'entre eux veut enfiler un pantalon, mais Mavuché s'y oppose. C'est trop de civilisation décidément ! Le père de ce garçon, très ennuyé, vient supplier le chef de lui donner un morceau de peau pour son fils qui doit pourtant bien se vêtir de quelquechose. Maaghé y consent de mauvaise grâce. Il a l'air de trouver qu'un pantalon eût été tout-à-fait admissible en l'occurrence, mais évidemment il ne veut pas entamer une discussion avec son puissant conseiller moins favorable aux idées modernes..

Maintenant la flamme crépite et le cortège va faire son entrée, dominé par le drapeau Khaha dont l'aspect rappelle un peu celui des aigles romaines. Une

véritable frénésie s'empare de tout le peuple. Les hommes se précipitent à la rencontre des circoncis avec des bonds de bêtes sauvages : il vont et viennent sur la place en courant, comme des fous : ils passent et repassent devant nous, nous regardant dans le blanc des yeux avec des regards fixes, hébétés, comme s'ils étaient hypnotisés. D'autres prennent des attitudes grotesques, et nous frôlent au passage. Certains font semblant de se battre. L'un d'eux, se raidissant dans un spasme nerveux, arrache une des perches de la cour du *Balé* qui était encore debout et s'efforce de la briser. L'excitation va croissant. Un vieux à barbe blanche, décoré d'un gracieux chapeau de feutre recouvert de plumes bleues, de cocardes de poils, de nombreux colliers faits avec des bouts de piquants de porc-epic, gesticule au beau milieu de la mêlée. Au milieu de tout ce tumulte, les circoncis, très calmes, s'avancent lentement, du côte de la cour des filles. On a laissé un bout de la clôture de roseaux à l'arrière de cette cour, juste au dessous de la perche surmontée d'une antilope sculptée, qu'une gigantesque plante de liseron sauvage aux feuilles énorme a escaladée jusqu'à son sommet. Alors quelques jeunes gens furieux s'élancent contre ces roseaux, les transpercent avec leur bâtons, les frappent à tours de bras, grimpent dessus avec des cris de triomphe. Que signifie ce manège ? Est-ce le symbole de la prise de possession de l'établissement féminin par l'établissement masculin ? Ou plutôt ces jeunes gens veulent-ils montrer qu'ils applaudissent à la destruction de la bêtise enfantine des filles qui se prêteront désormais plus volontiers à leurs desseins ? Je ne sais. Personne ne peut me l'expliquer.

Demi-tour à droite : toute la troupe des circoncis retourne en courant du côté de la porte de village, comme s'ils étaient près de panique. Pendant ce temps l'incendie augmente de violence : une flamme immense s'élève de l'enclos du *murudju*. Maaghé voudrait choisir ce moment pour prononcer son discours. Je lui fais remarquer qu'il serait bon que les filles du *Balé* fussent présentes aussi. Il se déclare d'accord et les envoie chercher, et nous assistons alors à l'arrivée de leur cortège précedé d'une foule de femmes dansant devant elles comme les hommes l'avaient fait un instant auparavant devant les garçons. Elles cheminaient, les petites, le dos courbé, faisant angle droit avec leurs jambes, les yeux couverts par leurs mains. Le contraste avec les circoncis se tenant debout et brandissant leurs bâtons neufs était frappant. Evidemment l'ère du féminisme n'a pas encore commencé chez les Ba-Khaha. Elles traversèrent ainsi la place quatre ou cinq de front et montèrent à la cour du chef où elles demeurerent prosternées au moins un quart d'heure jusqu'à ce que Maaghé eût exhibé la récompense qu'il devait au père et à la mère du *Balé*, c'est à dire aux deux principales directrices de l'école des filles. Là nous eûmes l'occasion d'examiner à loisir leurs petites échines couvertes d'ocre et de graisse et reluisant au soleil ainsi que leurs têtes tondues à la manière des Ba-Pedi, sur le front, autour des tempes et à l'occiput, de telle sorte que le sommet du crâne seul reste couvert de cheveux, et, autour de cette tignasse, il y avait un liséré d'ocre très-clair, rouge tuile, interrompu par des parties noires.

Mais revenons sur la place du village où Maaghé va enfin pouvoir dire aux initiés quelle est sa volonté. Ils se sont tous agenouillés et Mavuché, debout, les considère avec des airs de père spirituel. Le chef s'avance, ôte son chapeau et dit : " Maintenant, ce n'est pas tout. Si vous voulez me faire plaisir, entrez à l'école du missionnaire ; c'est le vrai moyen pour vous de devenir sages. Si vous ne le faites pas, je sais bien ce qui arrivera. Vous vous battrez, vous ferez le mal, vous devrez tous les jours amener ici des chèvres pour payer vos amendes. Si j'ai fait des progrès, moi, c'est parce que le missionnaire est venu parmi nous et m'a appris à mieux vivre." Puis le chef me donne la parole pour compléter ses exhortations et c'est ainsi que se termina la seconde école de circoncision des Ba-Khaha en cette année de grâce 1906.

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Pour compléter cet exposé des rites d'initiation des Ba-Pedi (Ba-Suto du Transvaal oriental) il faudrait parler encore de ceux de la *troisième école* dite *Gomana*. Il semble qu'ils n'aient pas été conservés dans toutes les tribus et qu'ils soient réduits à fort peu de chose. J'en ai obtenu une description sommaire d'un informateur venant de la tribu de Modjadji (à mi-chemin entre Shiluvane et les Spelonken). D'après lui le but essentiel de cette troisième école c'est de scarifier le visage des initiés de manière à y produire trois ou quatre cicatrices, sorte de tatouage entre le nez et l'oreille. La nouvelle initiation qui leur est donnée concerne la nature d'une certaine trompette mystérieuse que l'on entend parfois résonner derrière les villages. Cette trompette faite avec deux planchettes réunies et contenant dans son intérieur une languette de cuir qui produit un son très spécial s'appelle *sidadjana*. Lorsqu'elle retentit dans la nuit, les hommes font croire aux femmes et aux enfants que ce sont les esprits des ancêtres (*badimo*) qui se promènent aux alentours des villages : ce sont des êtres redoubtable qui n'ont qu'une jambe, qu'une main, qu'un oeil : mais ils savent très bien jeter des pierres. Gare ! Et lorsqu'un personnage important meurt dans la tribu, le chef envoie ses messagers jouer partout avec ces trompettes qui sèment l'épouvante. Durant la troisième école, on révèle aux initiés le mystère de la *sidadjana*. Alors ils sont des hommes et non plus des enfants craintifs !

* * * * * * *

Cherchons à comprendre, pour terminer cette étude, la signification de ces rites, et demandons nous quel sera leur sort dans la société africaine nouvelle.

Les rites des écoles de la circoncision sont sans aucun doute en relation avec l'idée très répandue parmi les peuples primitifs que, *l'individu humain* ne peut acquérir son complet développement s'il ne subit une initiation accompagnée de souffrance. S'il fait preuve du courage nécessaire s'il se soumet bravement aux dures épreuves, il passera de la classe des enfants à celle des adultes. De plus il deviendra un homme intelligent, qui, connaîtra l'explication des mystères devant lesquels tremblent les non-initiés, les femmes et les enfants. Ces rites sont donc

très distinctement des rites de passage et l'on peut aisément distinguer parmi eux, comme nous le disions plus haut, ceux qui symbolisent la séparation d'avec l'état antérieur et l'aggrégation à la classe supérieure, le temps de reclusion constituant une période de marge où s'accomplissent les rites marginaux et où sont subies les épreuves.

Ces rites sont aussi soigneusement calculés pour affermir *l'ordre social* qui est celui de ces tribus bantu. Il se distingue par la prédominance du chef qui est le centre vivant de la nation. Or c'est le chef qui ordonne l'ouverture de l'école. Elle est à lui. De là un accroissement considérable de son autorité. Le jeune garçon ne saurait arriver à la condition supérieure qu'il rève sans le chef qui lui en procure le moyen. Ajoutons qu'il y a une finance scolaire à payer ; tout cet argent va au chef et lui apporte un supplément de revenus qui n'est point à dédaigner. C'est sans doute l'une des raisons qui expliquent pourquoi certains chefs devenus chrétiens ne s'empressent pas beaucoup de supprimer les écoles de circoncision.

L'ordre social bantu se distingue encore par la position qu'occupent les hommes au sein de la tribu. Ils possèdent le monopole absolu des affaires publiques. Les femmes n'ont rien à y voir. Elles sont exclues de la place ombragée où l'assemblée des hommes discute. Les rites d'initiation ont pour effet de souligner et d'accentuer cette différence. Les femmes et les non-initiés resteront toujours dans l'ignorance et la bêtise des enfants. Elles trembleront toujours à la pensée de la Bête ou à l'ouïe des trompettes des esprits. L'homme sait. L'homme est délivré de ces craintes. Il est le maître. Que la femme reste soumise !

Si telle est la signification profonde de ces rites, il est naturel de se demander *quel sera leur sort* dans l'économie nouvelle où les indigènes de l'Afrique de Sud entrent maintenant. Cette question n'est pas du domaine de l'anthropologie pure, mais elle est de nature à intéresser vivement quiconque se préoccupe de l'avenir de ces populations.

Il est très probable que, au contact de la civilisation et sous l'influence de la mission chrétienne, les Bantu abandonneront toujours plus leurs coutumes anciennes. Le procès de transformation est rapide. Il s'accélère tous les jours. Je suis de ceux qui le regrettent et qui désirent voir ces tribus conserver leur originalité et garder ceux de leurs usages qui sont compatibles avec une saine civilisation et un Christianisme compréhensif et spirituel. La tendance actuelle chez ceux qui étudient avec sympathie le problème bantu c'est d'insister sur les éléments de vérité et d'utilité que l'on découvre sans peine dans beaucoup de coutumes et de croyances bantu. Il faudrait *sublimer* ces coutumes et ces croyances ; elles pourraient alors se perpétuer sous une forme nouvelle et ces tribus, au lieu de s'assimiler d'une manière purement extérieure et superficielle aux Européens, garderaient leur caractère spécial et créeraient une forme de christianisme qui devrait demeurer authentique, mais qui correspondrait mieux à la mentalité africaine.

Si tel est le but à poursuivre, l'École de Circoncision peut-elle, doit-elle être maintenue dans l'économie nouvelle ? Remarquons d'abord que les indigènes sont très attachés à ces rites. Le chef Maaghé en envisageant la *Buhwira* plus ou moins comme une introduction à l'école chrétienne, aurait sans doute répondu : " Oui ! " à la question posée. Et en cela il serait d'accord avec le Canon Lucas de la Mission des Universités qui a organisé, d'accord avec les chefs indigènes, une école de circoncision dépendant de la mission laquelle, dit-il, a eu un grand succès. Qu'en faut-il penser ? Les rites que nous venons d'étudier peuvent-ils vraiment être sublimés ? J'ai quelque peine à la croire. Si l'on veut rester fidèle à l'esprit du Christianisme du Nouveau Testament et au code de sa morale spirituelle, il faudrait supprimer bien des choses dans la *Buliga* et la *Buhwira*. Lesquelles ?

Tout d'abord les *formules*. Il est possible que certaines d'entre elles soient innocentes, mais la plupart contiennent des allusions obscènes, non seulement des allusions, mais des expressions qui sont exclues du langage courant comme étant indécentes. Si ces formules jouent un rôle si grand, c'est que l'école de la circoncision toute entière est dominée par le préoccupation sexuelle. De là les insultes lancées à la face des femmes qui feraient rougir même leurs visages noirs, si elles n'étaient chose admise pendant les mois de reclusion des initiés.

Ces abus de langage sont en relation directe avec le *mépris de la femme* qui dicte plusieurs de ces rites. Les femmes sont des créatures inférieures qu'il faut laisser et maintenir dans leur ignorance et dans leurs terreurs, comme les enfants. L'épisode de la Bête est caractéristique à cet égard. C'est l'organisation voulue, consciente de la mystification et l'exploitation au profit de l'homme de la faiblesse nerveuse de la femme.

Une école chrétienne de la circoncision pourrait-elle admettre le principe des *épreuves physiques douloureuses* sans lesquelles la *Buliga* et la *Buhwira* perdraient une grande partie de leur raison d'être ? On peut en discuter. Les partisans du maintien de la coutume insistent sur le fait que *l'opération de la circoncision* est utile, physiquement parlant, et que dans une école dirigée par des blancs, avec les moyens chirurgicaux et antiseptiques dont ils disposent, on éviterait l'infection qui a souvent causé la mort de quelques candidats dans les écoles de la brousse. Il est très possible que la circoncision soit en effet recommandable au point de vue de la santé. Elle est fréquemment pratiquée chez les blancs eux même. Mais alors qu'elle demeure une opération chirurgicale faite dans un but déterminé d'hygiène, qu'elle ne devienne pas une cérémonie en quelque sorte religieuse : qu'elle reste une affaire médicale, entre les mains du docteur et ne soit pas une sorte d'acte ecclésiastique, ordonné par l'autorité spirituelle et exécuté sous sa surveillance. Sinon il risque de se produire une confusion extrêmement fâcheuse, entre deux domaines qui doivent demeurer distincts, cela au détriment de la spiritualité du Christianisme africain que nous rêvons.

Si l'on enlève de l'école de circoncision les quelques éléments que j'ai signalés et qui ne sauraient être admis, je ne vois pas bien ce qui reste à sublimer, en fait de rites. Sans doute il reste l'idée fondamentale, l'idée du passage, du progrès, de l'évolution vers un état supérieur. Certes cette idée est juste et belle. Mais elle trouve son expression dans le rite chrétien du baptême précédé d'un temps de préparation intellectuelle et morale et d'un examen d'admission. Voilà le vrai rite de passage de la religion chrétienne. Le baptême qu'institue le Nouveau Testament est à la fois baptême d'eau et baptême d'esprit et de feu. Remarquez que l'eau et le feu sont précisément les symboles dont se sert l'initiation africaine pour représenter la destruction du passé méprisable et l'accès à la vie nouvelle. Le baptême ne serait-il pas lui-même la sublimation spirituelle des cérémonies d'initiation des Bantu, comme peut-être aussi des mystères de la Grèce ? Et si c'est le cas, ne pourrait-il pas suffire à l'Eglise africaine de l'avenir ?

En tous cas quelque légitime que soit la tendance actuelle à sublimer les coutumes anciennes dans la société indigène en voie de formation au Sud de l'Afrique, il est nécessaire d'étudier à fond la nature de ces coutumes si l'on ne veut pas s'exposer à de pénibles surprises. A cet égard l'Anthropologie peut rendre les plus grands services à la Mission.

HUMAN SKULLS FROM ANCIENT CEMETERIES IN THE TARIM BASIN.

Found by Sir Aurel Stein, *and described and explained*

By Sir Arthur Keith,

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[With Plates XIV–XVIII.]

In his third expedition to Central Asia (1913–15), Sir Aurel Stein brought back many archæological treasures. Among them were five human skulls recovered from cemeteries situated in desert sites—sites which drought and desiccation rendered uninhabitable many centuries ago. In this paper I propose to give a description of these skulls, and to indicate their bearing on the racial constitution of the people who occupied the Tarim basin and borders of the Taklamakan desert of Chinese Turkestan in the earlier centuries of the Christian era. Sir Aurel Stein has published[1] an account of his explorations of this region in the *Geographical Journal* for May-June, 1925, but for readers who have no access to this account, nor of his later publications, the accompanying sketch-map (Text-fig. 1) will serve to indicate the position of the cemeteries from which he obtained the specimens here described.

The first specimen I shall give an account of comes from a site lying 160 miles to the north of the eastern extremity of the Taklamakan—situated in a desert valley—the site of a former oasis—between two eastern outliers of the Tien Shan range. This specimen—a mummified head—comes from the cemetery of Astana, Turfan, which contained "burials, mainly Chinese, of the 7th and 8th centuries" (Stein). The head was wrapped closely in coil upon coil of a fine silken fabric, of checkered pattern. Exact drawings, profile and full face, of this specimen are given in Pl. XIV: to give accuracy of detail, photographs of the same views are also reproduced. We have to do with the head of a man preserved by a process of natural mummification. The skin of the face is reduced to a thin brown parchment drawn tightly over the bones of the face: the hair, straight and long, has been drawn backwards and tied in a knot over the crown of the head. The muscles, vessels, and nerves are preserved as dried masses of brown fibrous tissue; there

[1] A full account of his third expedition is contained in *Innermost Asia*, 1928. I shall have occasion to refer frequently to anthropological data brought home by Sir Aurel Stein in his first expedition (1900–1), second expedition (1906–8), and also his third expedition (1913–15). His anthropological data from these three expeditions have been examined, systematized and published by my friend Mr. T. A. Joyce in this *Journal*: vol. xxxiii (1903), p. 305 (first expedition); vol. xlii (1912), p. 450 (second expedition); vol. lvi (1926), p. 65 (third expedition).

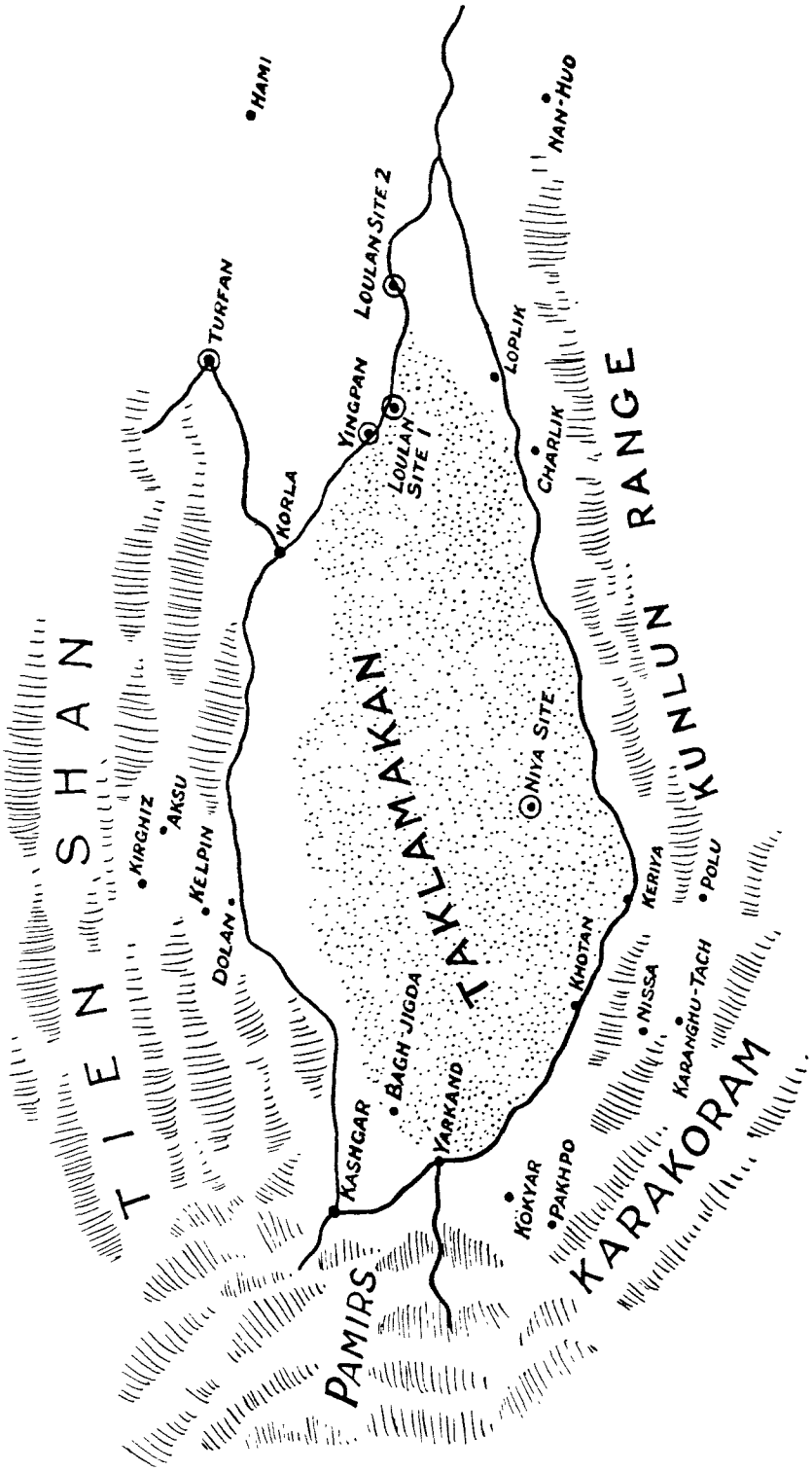


FIG. 1.—MAP OF TAKLAMAKAN DESERT, CHINESE TURKESTAN.

is not any suggestion of the use of an artificial preservative or of any attempt at purposive mummification. To attain such a result we must presume that the body was interred in a parched soil—that the ancient inhabitants of the Turfan oasis made their cemetery beyond the area of irrigation. Possibly too, the salinity of the soil aided in securing such a perfect degree of preservation.

Nor can there be any doubt that the man thus preserved was a member of the Mongoloid stock. The scattered bristle-like hairs of his moustache, and the same kind of hairs sparsely planted on the chin and in front of the ears, are Mongoloid marks; so is the hair of the head. It is tied in a top-knot. In section the hairs are round with a mean diameter of 0·05 mm. The hairs are not perfectly straight but inclined, when plucked from the scalp, to be slightly wavy in contour. The hair is now tinged a rusty brown owing to changes wrought by the action of soil and air, but originally, I suspect, it was black, with here and there, especially in the head-knot, strands of grey. He was between 40 and 50 years of age. His incisor teeth met edge to edge with the biting surfaces ground flat: from the molar teeth the cusps had become worn off, exposing areas of dentine on the crowns. Although microscopic sections of the skin were cut it was not possible to determine the amount of the original pigmentation, owing to a general impregnation of all tissues with black granular matter. I formed the opinion that the skin could not have been fair: it was probably a light brown—or yellowish grey.

This head has "Chinese" resemblances, yet in a multitude of details it differs from what is considered typical of a Chinaman or of a Mongol. The length of the actual skull is 188 mm.: its width is 140 mm.: the width is 74·5 per cent. of the length: it is dolichocephalic: it is high-roofed; the bregma is 121 mm. above the Frankfort plane; its height is due to the roof being ridged—the parietals slope upwards to meet at the sagittal suture. The sides of the head are flattened: it is not a bullet-headed type of Mongol we have to do with but one with a long, pent-roof skull. The forehead is not that of the typical Mongol: the supraciliary parts of the supra-orbital ridges are pronounced and clearly demarcated from the supra-orbital parts. The minimal width of the forehead—on the bone—is 103 mm.—a wide forehead: the width between the outer ends of the supra-orbital ridges is 115 mm., indicating a lateral prominence in these ridges. There is a considerable degree of subnasal prognathism. The chin is seen to be strongly marked: the nose is of medium prominence. The various features of the face will be dealt with later, but in the meantime it is sufficient to note that they are not typical Mongolian—they tend rather towards the European or Caucasoid type.

Had we met this man in life without doubt we should have recognized him as a member of the Mongoloid stock, but as to the particular branch he was to be assigned we should have been less certain. Sir Aurel Stein has shown that Turfan lies on a route used by administrators, soldiers and traders from China before and after the birth of Christ, but I do not think this man came of a stock that was ever native to

China. He also has shown that Turfan lies within the home territory of the Huns; it may be that this man was a Hun. We shall see that three skulls, all of them of men, from cemeteries which lie 160 miles to the south of Turfan and within the margin of Taklamakan desert, possess the same shape and racial features as this mummified head: from which I conclude that in the mummified head we have a representative of the population which occupied the north-eastern area of the Tarim basin during the early centuries of our era. From a study of photographs of nomadic Kirghiz which still occupy adjacent regions, I recognize in them facial features which if not identical, are yet very similar, to those of the Turfan and Loulan people.

The second specimen I shall mention is a remarkable skull from the Cemetery at Ying-pan (Pl. XV, Fig. 1) on the border of the Taklamakan and 160 miles to the south of Turfan. This skull has been marked by Sir Aurel Stein "Ying. III. 1. 01": it is No. 3 in my tabulated lists of measurements. Sir Aurel has informed me that it comes from the "Burial-ground near the ancient station of Ying-pan occupied on Chinese trade route at Kurukdarya head. Abandoned probably since 4th–5th centuries A.D." It is the skull of a sturdy man, over 50 years of age, for the sutures are just traceable and the crowns of the molar teeth are worn so that a full field of dentine is exposed on their chewing surfaces. The skull is remarkable in several respects; it is heavy and capacious; its capacity, by direct measurement, is 1575 c.c. In the roof, which is high-pitched, there is a large bone inset at the bregma—the so-called "os antiepilepticum" (Pl. XV, Fig. 2). The walls of the skull are dense and thick: all its muscular processes are pronounced and strong. There is the clearest evidence that the man came by a sudden death and we can guess the nature of his fatality. The base of the skull has been driven inwards and the sudden compression of the cranial contents was such that its walls were forced apart. A great fractured rent runs up the occiput from the foramen magnum; another runs forwards, along the base and palate, and appears on the right temporal region, and also an accessory fracture will be seen to ascend to the right of the root of the nose (Pl. XV, Fig. 3). The only common accident which I can conceive as producing such results is that of being suddenly thrown from horseback, alighting on the head with the full weight of the body, impinging on the base of the skull and driving it inwards. Such an accident is more likely to break the neck than to drive in the base of the skull—but in this case the latter result has happened. The crown of the skull is peaked and particularly strong; we have to suppose that the accident happened on a yielding soil. Such results could be produced by pitching a malefactor from a height—but it is unlikely that the man who met such a fate would receive decent burial in the cemetery of a community. We have here to do with—not an average member of the community—for it is improbable that a skull which possesses all the traits associated with strength of character could be other than a leader in his community. If we make allowance for his individual characteristics there is

no difficulty in assigning this individual to the people represented by the Turfan head, and by two other male skulls to be described presently.

The various aspects of the Ying-pan skull are depicted on Pl. XV. Its maximum length, glabello-occipital, is 186 mm.: its maximum width—between the upper squamosals—is 145 mm.; the width is 78 per cent. of the length; it falls in the mesocephalic or medium-headed class. It is particularly wide at the attachment of the neck—the bimastoid width being 141 mm.; this man was thick-necked—the external occipital protuberance being massive, prominent and placed far back. The basi-bregmatic height was great—certainly 145 mm.—making all allowance for the part missing from the base. The bregma rises 129 mm. above the Frankfort plane—an exceptional auricular height. It is also to be noted that when the skull is set in the above plane, the bregma is situated at the highest point of the profile. When viewed on its occipital aspect (Pl. XV) this skull is seen to be narrower just below the parietal eminences than lower down; its upper parietal width is 134 mm. The frontal bone at its widest measures 124 mm.; its minimal width is 96 mm.: the forehead is thus narrower than in the Turfan specimen. The face is strongly built: its total length or height from nasion to the lower border of the chin, is 135 mm.—a long face; its greatest width—bizygomatic, 146 mm.—also a high figure. The glabellar and supraciliary prominences, as may be seen from the views in full face and profile—are protuberant: the supra-orbital processes are strong, yet the conformations of the lower forehead and of the inter-orbital process of the frontal are more akin to those seen in Mongolian skulls than to those present in the Turfan specimen. The width between the outer ends of the supra-orbital ridges is 106 mm. The length of the upper face, from nasion to alveolar point, is 83 mm.—a great length; its width (maxillary) measured between the lower ends of the malo-maxillary sutures, is 99 mm.—a moderate amount. The tip of the nose has been broken away, but enough remains to show a greater prominence than is usual in the skulls of Chinamen, but the root of the nose is forwardly placed in its origin from the glabellar region. The nose is high (57 mm.) and wide (28 mm.). At its lower margin rises upwards a ridge-like nasal spine—which continues the bony septum of the nose forwards, well beyond the lateral margins of the nasal aperture. On the sill of the nasal aperture, on each side of the nasal spine, is an oval fossa or depression (Pl. XV, Fig. 2).

The lower jaw is wide at its angles—the bigonial diameter being 107 mm.—owing to the eversion and prominence of the angles. The chin forms a triangular prominence, and when the skull is placed in the Frankfort plane (Pl. XV) this eminence lies 7 mm. behind the alveolar margin for the lower incisors. The sub-nasal prognathism is slight. The depth of the symphysis is 35 mm. The incisor crowns meet in an edge-to-edge bite. There is not a trace of dental disease; all the teeth appear to have been present and healthy at death. The width of the dental arcade, measured between the outer margins of the canines, is 41 mm., between

the outer margins of the 2nd molars, 68 mm.: the median length of the dental arcade is 51 mm., and the palate is 26 mm. deep. The palate is thus regularly formed and above medium size. The jaws are large, but apparently the muscles of mastication were not strongly developed, for the ascending ramus of the jaw measures only 33 mm. in width.

Taking all the characters of the Ying-pan skull into account, it must be assigned to a man belonging to some section of the Mongoloid branch of humanity. Although its measurements place it in the mesocephalic group yet, when the vertical contour of its occiput is taken into account, it is clear that there is in it the essential character of the brachycephalic type. Especially would I lay stress on the high conical dome: this conformation I have seen occasionally in Osmanli Turks.

A few miles to the east of Ying-pan—farther down the dried bed of the Kuruk-darya and still on the ancient Chinese route, there was another cemetery, from which Sir Aurel Stein brought away two skulls—both of men—one marked "L.T. 03" (No. 1 of my tabulated lists—because it is the most representative of the four male skulls), the other marked "L.S. 2. 07" (No. 2 of my lists). The position of this cemetery is shown in Text-fig. 1. Of these two skulls Sir Aurel Stein has written: "From burial places of the indigenous inhabitants of ancient Loulan in the now waterless Lop Desert. Period probably 2nd–3rd centuries A.D."

The first Loulan skull (L.T. 03) is depicted in Pl. XVI—in all four aspects, so that a full description is not necessary. The points of resemblance to the head from Turfan are numerous and intimate. The man's age was probably between 30–40 years; the sutures are unobliterated and the molar teeth are worn only to the depths of their cusps. The highest point of the vertex lies 40 mm. behind the bregma: the parietals slope backwards and downwards to end in an occipital region, which is not vertical as in the Ying-pan skull, but is cap-like. The form in profile is that we meet with in dolichocephalic skulls: the maximum length—glabello-occipital—is 181 mm.: its maximum width—at the squamo-parietal junction—is 135 mm.: the width is 75 per cent. of the length. The height—basi-bregmatic—is 138 mm., and the auricular (bregmatic) height 118 mm., but the highest point of the crown is 5 mm. more—123 mm. The height is great compared to the length and breadth. The cranial capacity, taken directly, is only 1230 c.c. The sides of the skull are flat and nearly vertical, the width below the parietal eminences being only 2 mm. less than lower down. The roof is ridged, the parietals sloping upwards to meet at the sagittal suture. The neck was of moderate strength, the bimastoid width being 129 mm.: the inion lies 67 mm. behind the mid-point of a line joining the anterior margins of the mastoid processes. The frontal bone, at its widest, measures 121 mm.: at its narrowest (biminimal width), 98 mm.

When we turn to the facial aspect of this skull we find the same European-like conformation of the forehead as in the Turfan head; both supraciliary and supra-orbital processes are prominent and sharply demarcated; the outer ends of the

supra-orbital processes project laterally, the width between their outer ends being 112 mm., giving an unmongolian aspect to the lower forehead.

The total height or length of the face is 102 mm.—a short face: its greatest width—bizygomatic, 128 mm.—also small. The length of the upper face—naso-alveolar—is 64 mm., and the width between the lower ends of the malo-maxillary sutures 100 mm., which is large compared with the bizygomatic width. The nose, somewhat damaged, is short, its height being 46 mm., its width 26 mm.—a relatively wide nose. The nasal spine runs forward, jib-like, and the lower margin of the aperture shows no fossæ, but has a well-marked border continued from the wings of the spine to the lateral margin. There is no subnasal prognathism: the incisors meet in an edge-to-edge bite; the chin is well developed, lying 4 mm. in front of the lower alveolar point. The depth of the symphysis is 30 mm.; the angles of the lower jaw are not prominent, having a bigonial width of 96 mm. The width of the ascending ramus of the jaw is 34 mm. All the teeth are sound: the surfaces of the molar teeth have been worn flat and even by chewing. The dental arcade is well formed: its bi-canine width is 42 mm., the bi-molar width 65 mm., its antero-posterior (median) length 53 mm., the depth of the palatal vault 18 mm.—8 mm. less than in the long-faced man of Ying-pan. Were it not for the guidance given by the Turfan head, the craniologist might have doubted the Mongoloid affinities of the man to whom this skull belonged.

The second skull from the Loulan cemetery, marked "L.S. 2.07" (No. 2 of my lists), needs only a brief description: it is so like to the one just described. Its detailed measurements will be found in the tabulated lists: its four aspects are depicted in Pl. XVII. The skull is that of a man about 45 years of age; the posterior half of the sagittal suture is obliterated. The molars are worn so as to expose a complete field of dentine on their chewing-surfaces. The roof, as in the last, slopes upwards to the median line: the sides draw in as they rise to the parietal eminences—the lower or greatest width being 139 mm.; the upper parietal being 128 mm. The greatest length—glabello-occipital—is only 174 mm.: the width is 79·9 per cent. of the length—the skull thus rising in its diameters almost to the brachycephalic class. Yet we see nothing of the occipital flattening usually found in brachycephalic skulls—its contour in profile is dolichocephalic. The roof is relatively high; the basi-bregmatic height is 138 mm.: the bregma lies 115 mm. above the Frankfort plane; the highest point of the vault—40 mm. behind the bregma—118 mm. The cranial capacity is 1265 c.c., being a small amount. The facial conformation is that of the last specimen, only the bizygomatic width is greater, the subnasal prognathism a little more marked, but the chin is particularly well formed and prominent—a very unmongolian feature. The teeth are all sound and the dental arcade well formed.

The two skulls just described came from Loulan Site 1: some 150 miles farther to the east, still on the old Chinese route across the desert, Sir Aurel Stein opened a

second cemetery (Text-fig. 1, Loulan Site 2). "Here we found," writes Sir Aurel,[1] "graves holding bodies of the indigenous Loulan people who once tenanted the small stronghold. Some of the bodies were so wonderfully well conserved, together with their burial deposits, that I felt myself here brought face to face with the race of semi-nomadic herdsmen and hunters whom the Han Annals describe as the native population of Loulan. Their features showed close affinity to the *Homo Alpinus* type which, as the anthropometrical material collected by me proved, still continues the chief element in the racial constitution of the Tarim basin." Having taken photographs of the dead, he refilled the graves, leaving the bodies as he had found them. When first shown these photographs I agreed with Sir Aurel Stein that these faces of the "old inhabitants of Loulan" were not Mongolian in appearance, but my examination of the skulls just described and the comparison of their features with those of the men shown in Sir Aurel's photographs, have compelled me to alter my opinion and conclude that all are the same people. I am convinced that a fuller examination of the bodies in the second Loulan cemetery will reveal the same Mongoloid affinities as are to be seen in those from the first Loulan site. Nor must it be forgotten that Mr. Joyce, in dealing with Sir Aurel Stein's data, admits a considerable Mongolian—or Tibetan—element in the peoples who now live along the southern margin of the Tarim basin, particularly in those who occupy the basin immediately to the south of Loulan—the Loplik.

There is only one skull from the ancient cemeteries along the southern border of the Tarim basin—from a long-forsaken settlement at Niya—350 miles to the south-west of the Loulan sites. The skull carries the mark "N. IX. 01": it is No. 4 of my series. The explorer's note on the specimen is: "From wind-eroded ground of Niya site, in south area of the Taklamakan. An ancient settlement of a population which spoke an Iranian language. Abandoned in 3rd century A.D."

The skull is that of a woman and, as may be seen from Pl. XVIII, has very decided characters. It is small and of an elongated, depressed, bun-shape, the face being almost child-like in the size and delicacy of its construction, yet the woman was fully adult. There is no lower jaw. All the teeth have fallen out since death, leaving empty sockets. She had suffered latterly from toothache, as evidenced by the cavities of four considerable dental abscesses. The sutures of the skull in the region of the pterion and lambda are in process of obliteration. She was over 30 years of age. She was ultra-feminine in type—a type which appeals to men of all countries and apparently in all centuries. Her skull, in its greatest length, measures 178 mm.: its greatest breadth, 133 mm.—the width being 74·7 per cent. of the length; she was dolichocephalic. The roof of the skull is low and relatively flat; the bregma is only 105 mm. above the Frankfort plane; the highest point, fully a centimetre behind the bregma, is 106 mm.: the vault slopes gradually downward as it passes

[1] *Geographical Journal*, 1925, May-June, p. 34.

backward to end in lowly placed, cap-like occiput. The basi-bregmatic height is only 125 mm. : the cranial capacity is very low (1140 c.c.)

Seen in profile the forehead is nearly vertical ; the supraciliary and supra-orbital processes are lightly demarcated (Pl. XVIII, Fig. 2) ; a condition of early youth has persisted into adult years. The forehead, at its narrowest, measures 87 mm., whereas measured at the upper level of the orbits the diameter is 98 mm. ; the frontal bone at its widest measures 110 mm.—all being small measurements.

The upper face is remarkably short : the upper alveolar point lies only 51 mm. from the nasion ; the bizygomatic width is 120 mm. and the zygomatic arches are fragile. The nasal height is 43 mm. ; the width of the aperture, 21 mm. The upper jaw is altogether peculiar ; the palate is so shallow that the depth of the palatal vault below the alveolar border for the second molars measures only 5 mm. She must have had a very short upper lip ; the vertical distance from sill of nose to alveolar margin is only 10 mm. ; the upper incisors were set so as to project almost as much forwards as downward ; there was thus a degree of subnasal prognathism—the alveolar margin projecting 5 mm. in front of the subnasal notch. The nose is neither sharp nor prominent but moulded as in childhood. Another mark of infantilism is seen in the condition of the 3rd molar (wisdom) teeth ; on the right side this tooth had formed merely a small peg, on the left side it had not been formed at all. All the teeth must have been small as well as short-rooted. The width of the palate at the second molar alveoli is 51 mm., the antero-posterior diameter of the dental arcade only 31 mm.

At first sight it hardly seems possible that this woman could have been of the same race as the men whose skulls we have just passed in review, and yet a full consideration of all the characters and circumstance has led me to think that she may have been. We must remember that she cannot be regarded as representative of the women of her race ; her feminity is too pronounced for that. In any case we have a problem which tests the resources of modern anthropology. To which of all the known races of Asia can the owner of this skull be assigned ? Or for that matter—to which living race or racial stock of Asia—or of Europe—are we to assign the men whose skulls were found in the north-eastern cemeteries of the Tarim basin ?

Other Skulls from Turkestan.

To assist us in obtaining an answer, let me pass in brief review a small collection of skulls, seven in number, from the Tarim basin and neighbourhood which is now preserved in the Museum of the Royal College of Surgeons of England. Four of these were brought home by H. W. Bellew in his second expedition to Central Asia (1873–4) and were obtained from disused cemeteries or tombs of the *western* end of the Tarim basin. One of these is a woman's skull (No. 803 B.D.) from an ancient grave at Kashgar. If this skull had been found in a miscellaneous series and I had

been asked to identify it from its racial characters I would have assigned it unhesitatingly to a full-blooded negress, and yet when Dr. Barnard Davis examined it on its arrival in England he had no doubt of its Mongolian affinities. The note he made on it reads thus: "Received with the soft parts dried upon the face which then presented a decidedly Mongoloid aspect." Of late many writers have drawn attention to negro, or negroid, peoples of Africa who possess features of a Mongoloid cast; several craniologists have described skulls of definite Mongolian origin which possess an assemblage of negro-like traits, such as are present in the woman's skull from Kashgar. Such resemblances between members of diverse races do not surprise anthropologists who accept the theory of evolution, and regard all modern human races not only as co-descendants from a common ancestry but also as the co-heritors of the same machinery of differentiation, which, working under different conditions, has given each race its characteristic traits. I do not hesitate to accept the Mongolian origin of the Kashgar skull, but as to what division of that stock and of other female skulls in our collection—from Tibet and other parts of Asia, showing similar negro-like traits—such skulls are to be assigned is a more difficult matter. No doubt there had been traffic in women in ancient Kashgaria and coming and going of hordes of various peoples, but for reasons I shall mention later it is safest, unless there is direct evidence to the contrary, to presume that a skull found in a locality represents a native of that locality.

Now this Kashgar woman's skull, although its face and jaws are developed to a robust degree, yet has many points in common with the Niya woman's skull. The brain "box" has the same form but is bigger: its length is 184 mm., its width 138 mm.: the width is 75 per cent. of the length—the same proportion as in the Niya specimen: it has the same low roof sloping backward and downward to a cap-shaped occiput; the basi-bregmatic height is only 126 mm.: the bregma is 112 mm. above the Frankfort plane. The upper face is only 56 mm. high, but the teeth are big, the alveolar process for the teeth-sockets well developed, and there is a pronounced subnasal prognathism—as there also is, but of a modified form, in the Niya specimen. The nose was short: its height is 44 mm., its width 26 mm. In this case the lower jaw is present. The total length of the face is 103 mm.: its width, bizygomatic, is 120 mm.—a low amount considering the strong development of the jaws. The forehead, unlike that of the Niya specimen, is 100 mm. wide, the width at the supra-orbital level 102 mm.; the palate is moderately wide (60 mm.): the maxillary width is also great (89 mm.). The real difference between the Kashgar and Niya women lies not in race but in the development of teeth and jaws: in the one there is a pronounced over-development—giving a negroid appearance, and in the other there is an extreme degree of under-development. I infer that both women were members of the same racial stock—a Mongoloid stock.

The six male skulls in the R.C.S. Museum come from the western end of the Tarim Basin—700 miles distant from the locality in which Sir Aurel Stein gathered

his specimens, yet for the solution of the problem of race it will be well to pass these western skulls under brief review. Two of them were obtained by Mr. Bellew in tombs at Yangi Hassar, which is situated between Kashgar and Yarkand. Both are of the same type—a type of which Mr. Joyce, in his reports on Sir Aurel Stein's data, has spoken of as *Homo Alpinus* or as Iranian—the latter name being, to my way of thinking, the more suitable. These skulls represent the brachycephalic type which prevails in the native populations of the Pamirs and in the drainage area of the Amu-daria or Oxus. No. 805 B.D. is described in our catalogue as a "Turk" or "Tatar." Barnard Davis records that "locks of short black hair still adhered when received," and that, in his opinion, the nose was rather like the "American." The skull is high with a slightly "bombéd" but almost vertical occiput. The length is 184 mm.; the width 141 mm., being thus 76·6 per cent. of the length—a mesocephalic skull. Nevertheless in profile it looks as if it ought to be of the brachycephalic type. It is a high skull, the basi-bregmatic diameter 137 mm., its auricular height 123 mm.; the roof is not ridged but rounded when seen from behind. The face is narrow and of moderate length, measuring 112 mm. from nasion to lower symphyseal point; the bizygomatic width is only 124 mm. The nose is sharper and more prominent than in the Eastern Tarimese; its height is 51 mm., its width 23 mm. The upper face is 68 mm. high, the maxillary width 89 mm., and the bigonial width 98 mm. The chin is prominent, almost shelf-like. The upper dental arcade is 62 mm. wide and 45 mm. long. In size and shape this skull does not differ, except in details of conformation, from the Loulan type, but the face is moulded quite differently—in the sharper, narrower, Iranian manner. It is the oval, well-proportioned face, a type common in South-West Asia and in Europe.

The second specimen from Yangi-Hassar has its occiput flat and vertical, in the true brachycephalic manner. It is a short skull, only 167 mm. long: the width is 152 mm., being 91 per cent. of the length—an ultra-brachycephalic. It is high, the basi-bregmatic diameter being 142 mm., but the auricular height is only 123 mm., the same as in the last. The upper face is 74 mm. long, the whole face 125 mm., the bizygomatic width 134 mm., the bimaxillary 99 mm. The nose is prominent, narrow (20 mm.), and of moderate length (51 mm.), and it has the forwardly projecting jib-like nasal spine, never seen to such a pronounced degree in Mongols. The palate is contracted and small: the width of the dental arcade is 61 mm., its length only 37 mm., for his 3rd molar (or wisdom) teeth have never been formed; the jaws are small. This specimen shows all those features we expect in members of a community long accustomed to the comforts of civilization. The inter-orbital septum is narrow, only 23 mm. between the internal angular processes. The chin is prominent and shelf-like. It has all the facial features for which we want a name—a type common in Europe and South-West Asia, which may well be named Iranian, for it prevails in Asiatic peoples attributed to this stock. Barnard Davis regarded this skull as the skull of a "Turk" or "Tatar." Further, the

bridge of the nose is high, continuing the profile of the forehead downwards, as in the classic Grecian head. The two skulls from Yangi-Hassar represent the extremes of the type which prevails amongst all the people of the high Pamirs—a small-brained folk with skulls which have been curtailed more in their lengths than in their widths.

A fourth skull brought home by Bellew comes from a disused Mohammedan cemetery at Yarkand. Its catalogue number is 804 B.D., and presents remarkable features. As to its Mongolian affinities, the conformation of the forehead leaves us in no doubt: the root of the nose and that part of the forehead to which the root is attached are flattened and drawn upwards (Text-fig. 2). There is the pronounced "keeling" of the vault so often seen in Eskimo skulls. It is altogether of a different type from the two specimens just described. Its maximum length (glabello-occipital)

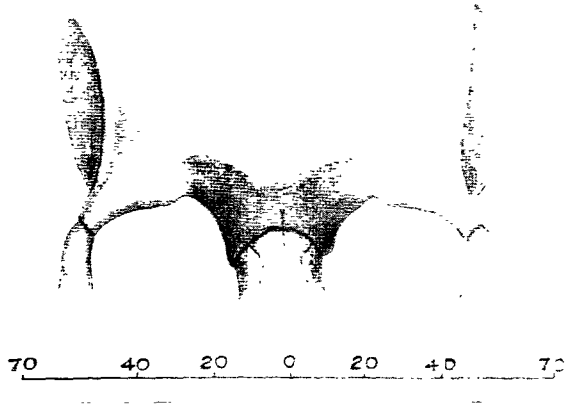


FIG. 2.—SHOWING THE CHARACTERISTIC FEATURES OF THE MONGOLIAN SUPRA-ORBITAL REGION. (½)

measures 181 mm.; it is flat-sided, its width being almost the same high up as low down (129 mm.); the width is 71·3 per cent. of the length—a dolichocephalic skull. The forehead is narrow (92 mm.): narrowness of forehead is, as Dr. Morant has observed, a Mongolian feature. The supra-orbital width is 101 mm. The vault is relatively low, 113 mm. above the Frankfort plane: the basi-bregmatic height is 135 mm. Yet the facial features are of a pronounced type, particularly the chin, which is prominent and shelf-like, and the lower jaw is deep at the symphysis (39 mm.) The total face is 131 mm. long.; the upper face 80 mm.; there is a considerable degree of subnasal prognathism. The nose is 56 mm. long, and 27 mm. wide, but not prominent, being in this respect "Mongolian." The nasal sill is sharply defined. The face, however, is narrow; the bizygomatic width is only 123 mm., the bimaxillary 95 mm., the bigonial 91 mm., and the palatal 62 mm. It is Mongolian and

yet intermediate in many features. Plainly in some features this skull resembles the Loulan specimens, but exceeds them in certain of its Mongolian affinities.

The three Bellew skulls just described represent men who were buried a century or more ago in cemeteries at the western end of the Tarim basin. The three skulls now to be described are of men who were natives of Turkestan in recent years. These three skulls came to the Royal College of Surgeons in the great collection made by Sir Havelock Charles in India during the last decade of the 19th century. No. 619.1 is described as a Turk—a native of "Kokand," in the eastern part of Russian Turkestan. In all its characters this skull might be that of a Sikh. It is 180 mm. long, 131 mm. wide—the greatest width being biparietal; the width is 71·1 per cent. of the length; its height (basi-bregmatic) is 136 mm., its auricular height 113 mm. The nose is narrow and prominent, its height 51 mm., its width 22 mm. The upper face is short (65 mm.), the bizygomatic width 131 mm.; the forehead is 94 mm. wide and the bigonial width 93 mm. The face is certainly "Iranian" in type, but the skull is narrow and of moderate length; the chin is well developed. It shows no Mongolian affinity of any kind. The owner was small-brained, his cranial capacity being 1320 c.c.

No. 619.2 is described as the skull of a Turk from Turkestan. It is of the Iranian type—not unlike Bellew No. 806 from Yangi-Hassar. Its length (glabello-occipital) is 178 mm., its width 139 mm.—being 78·1 per cent. of the length. It is a high skull, the basi-bregmatic diameter being 139 mm., the auricular height 117 mm. The occiput, slightly "bombéd," is almost vertical. The face is short, its total length being 111 mm., its upper facial length 62 mm.; but it is wide, the bizygomatic diameter being 145 mm. and its maxillary width 104 mm. The jowls are particularly prominent, the bigonial diameter being 122 mm. The nose is moderately prominent: its height is 52 mm., its width 24 mm.—an Iranian nose. The forehead is narrow (93 mm.), but the supra-orbital development is pronounced. The sill of the nose has a sharp margin. The dimensions and conformation of this skull—so far as relates to its brain-containing part—represents a type prevalent amongst all the Pamir tribes measured by Sir Aurel Stein and placed on record by Mr. Joyce. The face is not typically Iranian; it is too wide and too short for that, and yet such short wide faces are to be seen in a very considerable proportion of all the Pamir tribes and Tarim peoples visited by Sir Aurel Stein. The nose is narrow in spite of the width of face.

No. 619.3 is the skull of a native of Yarkand—a cultivator. It is almost a duplicate of Bellew No. 806—with a "bombéd," almost vertical occiput, short (176 mm.), wide (143 mm.) and high (138 mm.). The nose is prominent, 50 mm. high and 26 mm. wide. The face is of moderate length; from nasion to chin it measures 119 mm., the upper face length is 71 mm. The bizygomatic width is 138 mm., the bimaxillary 99 mm., the bigonial 96 mm. The sill of the nose is grooved or rounded, and the nasal spine is represented by a forward continuation of

the nasal septum—as in the skull from Ying-pan. This skull, too, is representative of a type found widely distributed in the valleys of the Pamir and along the upper basin of the Oxus. It is an Iranian type; it is the Tanjik type.

RACIAL NATURE OF THE LOULAN PEOPLE.

Having made a brief review of such skulls from Turkestan as are at my immediate disposal, I turn again to the chief question which awaits an answer: to what race are we to assign the people buried in ancient cemeteries of Loulan? The exact counterpart of the type does not prevail amongst any of the peoples now living in the region of the Tarim basin. A survey of Sir Aurel Stein's anthropometric data, systematized and published by Mr. Joyce in the papers already mentioned (*see* p. 149), makes us certain of this much: the people we are in search of had hair distributed as in Mongoloids; we have to find people with a head-length of about 188 mm.—for to the mean length of the Loulan skull we must add about 8 mm. for loss of soft parts; they must have a head-width of about 150 mm., for to the skull-width must be added 10 mm. in lieu of flesh; the cephalic index has to be in the neighbourhood of 80; the nose has to be about 50 mm. long and about 36 mm. wide in the flesh corresponding to 27 mm. in the skull; the face has to be of medium length —about 118 mm., and the bizygomatic width in the neighbourhood of 138–140 mm.; the forehead must have a Caucasoid modelling and the chin forward and well developed. The localities along the northern side of the basin at which Sir Aurel Stein made measurements of the population are shown in Text-fig. 1; these localities extend from Kelpin in the west to Hami in the east. As in former times so now, the population is Mongoloid in appearance. Let us take the Kirghiz first, because among them occur individuals who still reproduce the Loulan facial features. These Tarimese Kirghiz are ruled out: their heads—on the mean—are too short (180·5 mm.) and much too wide (160·8 mm.); the noses are nearly of the right length, but too wide; their faces are too short and too wide. Sir Aurel Stein measured another group of Kirghiz—in the Pamirs; their mean measurements come much nearer to the Loulan people. Their head-length was found to be 184 mm., the width 154·6 mm., with a cephalic index of 84—heads somewhat shorter and wider than those of the Loulan people; their noses are too short and too narrow to fit with the Loulan type; their faces too narrow but of about the right length. Discrepancies of this kind occur among all the peoples along the northern (Tien-Shan) region. At Kelpin, Dolan, Aksu, Korla, and Turfan heads are too short, too wide, too brachycephalic to permit us to link the Loulan skulls to the modern population of that area: but when we go farther eastwards in the direction of the Gobi, towards the westernmost province of China, measurements come nearer to those of which we are in search. At Hami (Text-fig. 1) the head-measurements are: length 187·7 mm., width 152·8 mm.—a little too wide for Loulan heads. At Nan-huo, within Chinese territory, these measurements are: length 192·4 mm., width 145 mm., the difference here swinging

in the opposite direction; the Loulan head was shorter and wider than that of the westernmost of living Chinese. The Hami nose (48·5 × 37·8) and the Nan-huo (45·2 × 35) are shorter than the Loulan nose but not markedly different as regards width. The Hami face (116·6 × 127·6) and the Nan-huo face (117·2 × 127·3) are too short and much too narrow to be identified with the Loulan type. Fortunately Sir Aurel Stein secured measurements of 38 Loplik who live on the Tibetan side of the desert, due south of Loulan (Text-fig. 1); their head-measurements (193·9 × 151·1) are similar as regards length to the Nan-huo men, but greater in width. The Loplik heads are considerably longer but of about the same width as in the Loulan type; their noses (47·1 × 35·4) are near to the Loulan dimensions, only too short; their faces (111·1 × 130·7) are too small in both diameters; and yet when we examine Sir Aurel Stein's photograph of a group of the Loplik there are individuals which show a near approach to the Loulan features. The Loplik are an intermediate people; everyone shows traits which are Mongoloid, but most of them show some traits of another type for which we have no name—unless we call it the South Tarimese, or simply the Tarimese type, for it is along the southern frontiers we find this type in its purity. I suspect that the type which most anthropologists have in mind when they speak of the Turki is this Tarimese type.

Before we can make up our minds about the Loulan people we must examine living Tarimese. Along the southern oases of the Taklamakan and in valleys of the Kun-lun above them, Sir Aurel Stein measured various samples at Charlik, Niya, Polu, Keriya, Karanghu-tagh, Nissa, Khotan, Pakpo, Kokyar and Sarikoli (Text-fig. 1). The prevailing type at most of these localities, but not all, has a short head, measuring from 178 mm. to 184 mm.; it has a head of only moderate width, 146 mm. to 150 mm.—small but high heads with a cephalic index varying between 78 and 81. These heads are smaller in their diameters than the Loulan type but of the same index. In size—in brain capacity—the Loulan type exceeds it, but in this, particularly as regards width, the Kirghiz and other Mongolian types of the north surpass the Loulan type. The typical Tarimese—those in the adjacent southern valleys—are small-headed: their nose varies in mean length from 45 mm. to 51 mm.—but is usually under 50 mm.—which is the Loulan mean; the width varies between 35 mm. and 37 mm., being thus of the Loulan width. Their faces vary in length from 112 mm. to 117 mm., being short-faced—shorter than in the Loulan type; their faces are narrow—usually between 124 mm. and 130 mm. Such is the prevalent type along the southern fringe of the desert, but there are exceptions. For instance, the Charlik, towards the eastern end of the fringe, have heads 190·6 mm. long by 154 mm. wide—big heads, longer and wider than in the Loulan type. Then in Khotan, heads are short—only 182 mm.—but 153·4 mm. wide.

Perhaps in actual measurements the people of Pakhpo, in a valley at the western end, and on the threshold of the Pamirs, make as near an approach to the Loulan type as any. Their head-measurements (186·8 × 148·5) are not far from

the Loulan standard; the Pakhpo nose (48·6 × 35·6) approximates to the Loulan dimensions; their faces (114·6 × 125·6) are shorter and much narrower. It is in the narrowing of the face that we find the chief difference as we trace the Tarimese type westwards, and in the suppression of the more evident Mongoloid traits. This small-headed Tarimese type extends away towards the west; Sir Aurel Stein found it at Faizabad in Northern Afghanistan, and along the plains and valleys of the upper Oxus, spreading into Karateghin and Bokara.

To obtain a more precise picture of the Tarimese type let us look at a group of ten men photographed at Pakhpo by Sir Aurel Stein: the photograph is reproduced by Mr. Joyce in this *Journal* (vol. xlii (1912), Pl. XXXIII). In one man distinct Mongolian features are traceable in his face; in another, the facial features are of the sharply chiselled Iranian type. The facial features of the remaining eight men fall into a series which link these two extremes. In head form the Pakhpo people fall just below the brachycephalic group—just under 80. All have white rosy skins; their hair, which is curly or wavy, varies in colour from dark brown to fair; in some the beard is abundant, in others it is scanty on the lower lip and cheek areas. Certainly these Pakhpo people are less Mongolian than the Loulan type, but there are bridging forms along the southern fringe of the Taklamakan which link them together.

Possible Tibetan Affinities.

There is still another area which must be searched for the Loulan type. To the south lies Tibet; the Kunlun range separates the inhabitants of the Tarim basin from the western Tibetans. Unfortunately our knowledge of the physical characters of the Tibetans is scanty. In the Museum of the Royal College of Surgeons are two series of Tibetan skulls which were collected and presented by Col. L. A. Waddell, and have been recently measured and described by Dr. G. M. Morant (*Biometrika*, vol. 14 (1923), p. 193). One series (Series A), 17 in number, come from Sikkim and the neighbouring region of Tibet; they represent people on the southern frontier of Mongolian distribution. The other series (Series B), 19 in number, is believed to represent natives of the province of Kham, in south-eastern Tibet, a region some 800 miles distant from Loulan. When the Tibetan and Loulan skulls are compared there is one feature which seizes the attention of the observer: all of the Tibetan skulls have a forehead of the Mongolian type (Text-fig. 2), whereas the Loulan skulls are Iranian in this respect. The Loulan people are not Tibetans but, as Mr. Joyce has suggested, there are features in the modern Tarimese which suggest a Tibetan affinity. There is a striking correspondence in many of the measurements of the large skull from the cemetery at Ying-pan (No. 3 in my series) and those of the Tibetan Khams—Dr. Morant's type B. The mean length, width, and height of type B are 185·8 × 139·4 × 134·8; the same measurements in the Ying-pan are 186 × 145 × 145—a big skull with wider and higher measurements than those found amongst the Khams. The face of the Ying-pan skull is long and massive as

in the Khams, and in dimensions and shape of nose they agree. The chief interest, however, for our present enquiry is that both the Tibetan Khams and Loulan people were long- rather than round-headed—the mean cephalic index of the Kham skulls is 75 : of the four Loulan males 77. Mongoloid peoples, just as Caucasoid peoples, may be round- or long-headed ; round-headedness reaches its maximum amongst the Mongolian peoples to the north of Chinese Turkestan. The cradle of modern brachycephalism lies between Mongolia and Armenia.

The Loulan is a "Frontier" Type.

Our search for the nearest living type of the people who occupied the north-eastern part of the Tarim basin in early Christian centuries has shown us that it is found best among the peoples who still inhabit the eastern and southern fringe of the Taklamakan. When we pass to the regions north and east of the Tarim basin we meet with peoples of decidedly Mongoloid affinities—on the south side of the desert and towards the west, Caucasoid or Aryan traits replace the Mongoloid. The Taklamakan desert, like the Himalayas, is part of that great racial divide which stretches across the Old World and separates Mongoloid peoples from others which neighbour them on the south and on the south-west. The Loulan type is of an intermediate nature ; it is a blend of Aryan and Mongol. Are we to regard the Loulan type, then, as a hybrid or cross—as one which has come about by inter-marriage between parents of different racial stocks ? Most anthropologists will give an answer in the affirmative. Twenty-six years ago Sir Thomas H. Holland contributed a paper to this *Journal* (vol. xxxii (1902), p. 96) entitled "A Study in Contact Metamorphism." The people he studied—the Lahoulis—live in the western Himalayas on the frontier which marks the Mongoloid type of Tibet from the Aryan type of the Punjab. He accounted for the physical features of the Lahoulis by the interbreeding which has taken place across the racial frontier. In his first report on Sir Aurel Stein's data, relating to the Tarimese in the oases of Khotan and Keriya, Mr. Joyce also explained intermediate characters by racial intermixture. He has written of them : "Both are, in the main, of so-called Aryan stock, the chief factor being Lapouge's *Homo Alpinus*. There is, however, in each case an admixture of Turki blood and a further admixture of Tibetan." (*J.R.A.I.*, vol. xxxiii (1903), p. 324.) Again in his report on data gathered in the second expedition, Mr. Joyce writes: "To sum up, the measurements show that the majority of the peoples surrounding the Taklamakan desert have a large common element. Further, that this element is seen in its purest form in the Wakhi (a people of the southern Pamirs). The fact that the Wakhi display so close a relationship with the Galcha proves that the basis of the Taklamakan population is Iranian. At the north-western edge of the desert an intrusive element, which can be sharply differentiated from the Iranian, makes its appearance—the Turki element. Besides this there seems to be some common bond between the peoples of the desert

and of Tibet." (*J.R.A.I.*, vol. xlii (1912), p. 467.) Mr. Joyce offers a perfectly legitimate explanation of the origin of the Tarimese: their character can be accounted for, if we suppose that an Iranian People had absorbed individuals of neighbouring Turki and Tibetan stocks. In the same way we might explain the origin of the Loulan type—a blend of Iranian, Turki, and Tibetan racial elements.

The explanation I offer is somewhat different. We have in the first place to account for the great racial "divide" which, beginning in Lapland in Northern Europe, ends in Asia beyond the mouth of the Ganges. The Taklamakan is on the racial frontier. The peoples of the Pamirs, Afghanistan, and Kashmir represent an Iranian bridge-head, projecting into Mongoloid territory: the Mongoloid stock has driven a deep wedge southwards in the direction of the Black Sea into a territory which we may presume to have been originally Caucasoid. *Per contra*, the Caucasoid type had extended a long corridor into Russian Asia. To account for the continuity of this racial divide we have to suppose that Mongoloid peoples have been evolved in the countries which bound it on one side, and that other types have been evolving at the same time in countries which lie on the other side of the divide—India, Persia, the Caucasus, Southern, Central, and Western Europe. That great racial divide has come into existence in the course of the evolution of modern races. The centres of racial differentiation did not lie on the divide but in various regions at some distance from it; a survey of the present distribution of racial types favours the supposition that centres of differentiation lie well within racial territories. The great racial divide of Eurasia is the result of recent evolution: it has tended to become more marked as time has gone on. The farther we go back in time, the less distinctly will this divide be visible, the more will peoples on each side of it approach in type. We should reach a time when between the types in process of evolution in two centres—say, Persia and Mongolia—there should occur a series of intermediate forms which will link the Iranian type with the pure Mongol. If evolution is true, we ought to find old intermediate types along racial frontiers, and that is what I think we do find. I explain the characters of the modern Tarimese and of their near relatives—the Ancient Loulanese—by regarding them, not as the products of hybridization, but of the natural course of evolution. They are intermediate evolutionary types. I do not assert that intercrossing does not take place across racial frontiers now, or in past times, but we cannot by such a simple expedient explain how races have been evolved and racial divides come into existence. We have only to compare the peoples measured by Sir Aurel Stein in the semi-isolated localities along the southern side of the Tarim basin to see the tendency there is to the evolution of local types. We have as scientific anthropologists to explain in the first place the origin of the various primary racial stocks, and if we regard them as the descendants of a common ancestry then there must also exist or have existed the intermediate forms which link the extreme types together.

Projection of Cheeks.

Having thus outlined the conclusions I have come to regarding the affinities of the Loulan people, I return to a consideration of details of their cranial structures. Individual measurements are given in tables at the end of this article.

The zygomatic arches—the buttresses and supports of the cheeks—are mainly concerned in mastication, nevertheless the prominence of these arches and the projection of the cheeks serve to distinguish races of mankind—particularly those of the Mongolian stock. I have been in the habit of making the following six measurements to bring out certain features of the zygomatic arches; they are made by a radiometer fixed in the meatal passages, and give the radial distance of points on the arch from the transmeatal axis—a transverse axis joining the right and left mid-meatal points. In Text-fig. 3, A is the radial distance of the anterior end of the fronto-malar suture from the transmeatal axis; B, the mid-point on the lateral margin of

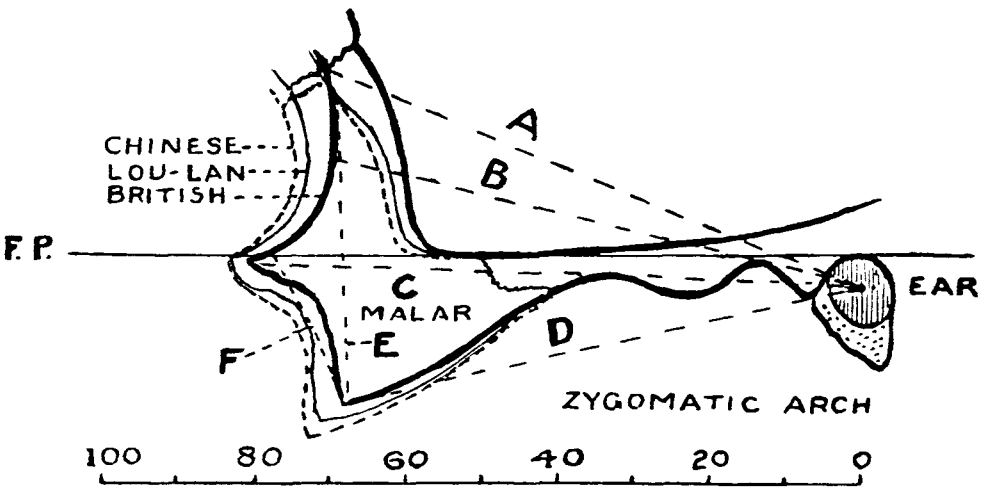


FIG. 3.—TO ILLUSTRATE THE DIMENSIONS TAKEN OF THE ZYGOMATIC ARCHES, AND TO COMPARE THEIR DEVELOPMENT IN LOULAN, CHINESE, AND BRITISH SKULLS.

(F P. = Frankfort plane. Explanation of A, B, C, D, E, F will be found in the text.)

the orbit: C, a point on the lower margin of the orbit crossed by the malo-maxillary suture; D, the lower end of the malo-maxillary suture—the lower "malo-maxillary" or "masseteric" point. To these, two other measurements, made by sliding-callipers, are taken to register vertical measurements, of the cheek; E, from the lower malo-maxillary point to the nearest point on the lower margin of the orbit; F, the distance from lower malo-maxillary point to the anterior fronto-malar point. For comparison with the Loulan measurements, I give in Table VIII corresponding measurements made on 10 male Chinese skulls—mostly from South-Eastern China, on 5 male Sumerian skulls (from Al'Ubaid, about 3000 B.C.), and 10 skulls of modern British males. Text-fig. 3 and Table VIII bring out the

contrast between the zygomatic arches of the Chinese and British. The arch in the Loulan skulls is intermediate in their dimensions but approximates to the Chinese type.

Projection of the Nose.

The nasal region of the face may become prominent (1) by a positive growth of all the parts which go to make up the nose: (2) by the retrocession of the cheeks, lateral walls of the orbits and zygomatic arches, thus leaving the nasal parts of the face exposed. In the typical Mongolian face the nasal parts have receded and the cheeks have remained constant or have advanced. In the Iranian face the opposite has occurred; there has been a positive nasal growth with a retrocession of the cheeks. In the Loulan people and Tarimese an intermediate state exists: cheeks and nose have a moderate development.

The manner in which nasal, orbital, and malar projections are best registered is shown in Text-fig. 4. The profile of the male Loulan skull—the mean of Nos. 1, 2, 3—is there represented, set upon the Frankfort plane; the pre-auricular half has been separated from the post-auricular part by a coronal plane which descends through the mid-meatal points at right angles to the Frankfort plane. The mid-meatal vertical plane provides a base from which we can measure the forward projection of the various parts of the nose and face.

The first point to be determined is the forward position of the lateral wall of the orbit, A, and then the amount to which the tip—the most advanced point of the nasal bones—lies in front of the lateral orbital point, C. We at once meet here with a decided difference between the Loulan and Chinese profiles. The lateral orbital point, in the Chinese, as may be seen from Table IX, is more advanced than in any other race dealt with in this enquiry; it lies 75 mm. in front of the meatal plane, whereas the mean of the three Loulan skulls is only 70·5 mm., in this agreeing with the Sumerian skull and exceeding the British skull. The lateral orbital point in the Chinese skull is far forward, but the nose is not advanced—the opposite. In the Chinese, the nasal projection in front of the lateral wall of the orbit is only 21·5 mm., whereas in the Loulan skull the mean is 28·5 mm. In the matter of nasal projection the Sumerian skull exceeds all I have so far measured (*see* Table IX); the nasal projection in that race was 38 mm., in Punjabi 31 mm., Southern Hindu 29 mm., British 31 mm., and Negro 26 mm.

Another projection is indicated, D, drawn from the mid-meatal plane to the most advanced point in the ascending nasal process of the maxilla. I have been obliged to use this point for the measurement of prehistoric skulls because it is usually preserved in them, whereas the nasal bones are usually damaged or lacking. The means of this measurement are given for several races in Table IX, and they are worthy of notice, for the projection of a nose may be due to the length of the nasal bones and to the development of their lower ends or to an increase in development of the ascending process

of the maxilla. In the Loulan skull the nasal bones are short, and the projection of the nose depends largely on the development of the ascending processes. The tip of the nasal bones projects only 2 mm. in front of the ascending process in the Loulan skull: in the Chinese it is more (3 mm.); in the Sumerians the lower ends of the nasal bones are so expansive that they project 9 mm. in front of the ascending maxillary point. Corresponding projections are: Punjabi 4·5 mm., Southern Hindu 3·5 mm., Negro 2·5 mm., and British 5·5 mm. The Loulan nose is intermediate in its characters, lying between the Chinese and Iranian forms.

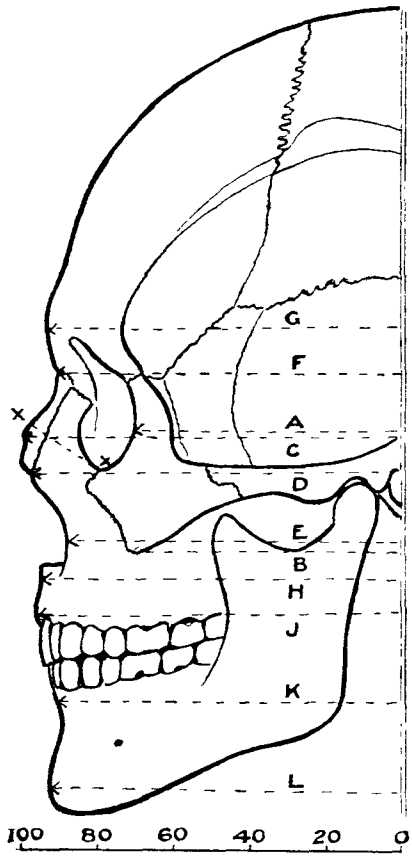


FIG. 4.—THE LOULAN FACE IN PROFILE—BASED ON THE MEAN MEASUREMENTS OF THE THREE SKULLS OF LOULAN MALES, WITH THE VARIOUS MEASUREMENTS INDICATED, WHICH ARE UTILIZED IN THE TEXT FOR RACIAL ANALYSIS OF FACIAL FEATURES. ($\times \frac{1}{2}$.)

In estimating the projection of nose and form of face the forward projection of another point must be taken into account—that of the lower malo-maxillary point—which marks the advance of the cheek and the anterior attachment of the muscle of the cheek—the masseter muscle, B. The forward projections of the lower malo-maxillary point are given in Table IX, col. B. In the Loulan skulls, the lateral orbital and malo-maxillary points are advanced to almost the same

extent, 70·5 mm.. thus agreeing with the Sumerian type, both in equality of relation and in the absolute measurements. In the Chinese skulls, on the other hand, both lateral orbit and cheek are forward in position, but the lateral orbital is the more advanced. Both the measurements are small in British skulls—particularly that relating to the forward position of the masseteric attachment. In the relationship just considered the Loulan skulls are not Mongoloid.

The forward position of the root of the nose, the naso-glabellar region—determines racial as well as individual characteristics. The forward position of the nasion in the racial types included in Table IX is wonderfully constant. In the Loulan type it is 90·3 mm.—1·3 mm. more than in the Chinese but 5·2 mm. less than in the Punjabi. When we consider the projection of the nasion in advance of the lateral orbital point (A, F) we see that it amounts to 19·8 mm. in the Loulan type, but only 14 mm. in the Chinese, 21 mm. in the Sumerian, and 23 mm. in the Punjabi (which in this respect is Iranian). The Loulan type in this matter is intermediate to the Mongolian and Iranian types. The forward projection of the glabella is important. This measurement (G) gives us the length of the pre-auricular part of the skull—the part which provides a base for the facial skeleton. In the Loulan type the glabellar projection is 93 mm.—1·5 mm. less than in the Chinese skull, 3·5 mm. less than in the Sumerian, and 5 mm. less than in the Punjabi; in this dimension the Loulan type falls to the bottom of our list.

The amount by which the glabellar measurement exceeds the nasion (G, F) gives a precise method of estimating, not the sharpness, but the depth of the sub-glabellar notch at the root of the nose. The depth of this notch in the Loulan type is 2·7 mm., in the Chinese 5·5 mm., Sumerian 5·5 mm.. Punjabi 2·5 mm. (an Iranian amount), Southern Hindu 5 mm., Negro 4 mm., and British 5 mm. In the slight depth of the sub-glabellar notch the Loulan skull simulates an Iranian trait.

The nasal bridge of Mongolian races has been measured by Miss M. L. Tildesley (*Biometrika*, vol. 13 (1921), pp. 239 and 240) and by Dr. G. M. Morant (*Ibid.*, vol. 14 (1923), pp. 206 and 227). In both Mongoloid and Negroid races the nasal bones are in a state of retrogression. In three groups of Burmese skulls investigated by Miss Tildesley the mean width of the bridge of the nasal bones, measured at its narrowest part, varied from 10·3 mm. to 11·6 mm.; in two groups of Tibetan skulls Dr. Morant obtained mean values of 8·1 mm. and 8 mm. The mean for the three Loulan males is 9 mm., in the Sumerian skulls 11 mm., Punjabi 8 mm., and the Southern Hindu 8·2 mm. By itself the width of the nasal bridge is not informative: it must be combined with the height of the arch taken at the same level as the width of the nasal bones. In the Burmese groups the mean heights of the nasal arches were 3 mm., 3·5 mm., and 3·6 mm.; in the Tibetan groups, 2·4 mm. and 2·6 mm. The mean height of the arch in the three Loulan skulls (3·16 mm.) is about the same as in the Burmese but more than in Tibetan and Chinese: its height in Sumerian

skulls is 4·6 mm., and in Southern Hindu 3·7 mm. In shape and size the nasal bones of the Loulan skulls are more Mongoloid than Iranian. The mean length of the nasal bones in the Loulan skulls—so far as they could be measured along their mesial border—was about 22 mm. They are short bones.

The most instructive measurement of nasal differentiation is that shown at X–X (Text-fig. 4): it represents the extent to which the dorsum of the nose rises above the lower margins of the orbits. The point taken on each side is where the malo-maxillary suture crosses the lower margin of the orbits. The measurement is taken at right-angles to the general trend of the dorsum of the nose. In the female Loulan skull this measurement was only 13·5 mm., the mean for the three males 17·3 mm. In the Sumerian skulls the orbito-nasal height is 26 mm., in the British 24 mm., while in the group of Chinese skulls (10) it was only 14·5 mm. In orbito-nasal height the Loulan nose was intermediate to the Mongolian and Iranian types.

Another measurement which assists us to discriminate races is that made to the lateral nasal point E (Text-fig. 4). The lateral nasal point is taken on the least advanced part of the lateral margin of the nasal or pyriform aperture. This point in the Loulan skull is 87·3 mm. in advance of the mid-meatal plane—about the same as in Punjabi and British skulls, considerably less (5·2 mm.) than in the Sumerian type, but considerably more (2·8 mm.) than in the Chinese. The peculiar flattening in the lower nasal region of the Chinese face is due (1) to the advance of the masseteric point, (2) to the retraction of the lateral nasal—the difference between the two measurements being in them only 12·5 mm., whereas in the Loulan type the difference is 17 mm., the same as in Punjabi skulls but less than in the Sumerian type, in which the difference is 22·5 mm. How other racial types stand in this respect will be seen from Table IX. In the conformation of the naso-malar region the Loulan skull is not Mongoloid but mid-way between that type and the Sumerian.

Projection of Jaws—Prognathism.

The system of measurements depicted in Text-fig. 4 provides us with a method of estimating the degree and nature of prognathism. As seen in life, prognathism is the amount to which the incisor or subnasal region of the upper jaw projects in front of the lateral wall of the nose—the lateral nasal point (F). We have to consider the forward development of two points in the upper jaw—the subnasal (H), the least advanced point just below the nasal spine, and the gnathion or upper alveolar point (J). In its pre-auricular advance of the subnasal point the Loulan skull (*see* Table IX, H) exceeds the Chinese by 5·3 mm., but falls short of the Sumerian by 3·2 mm. A peculiar feature of the Loulan skull is the advance of the subnasal point beyond the lateral nasal—a difference which amounts to 7 mm., whereas in most of the other races cited in Table IX the difference amounts to about 5 mm., in the Chinese rather less, in the British much less. The difference

between measurements H and J gives the actual amount of subnasal prognathism. In the Loulan type the subnasal prognathism amounts to 0·7 mm., in Chinese 4·5 mm., Sumerian 1·5 mm., Punjabi 2 mm., Southern Hindu 1 mm., Negro 6 mm., and British 1·5 mm. In the conformation of the subnasal region the Loulan skull is not typically Mongolian.

No bone takes a more important part in determining the racial characteristics of the face than the lower jaw. In my present analysis of the Loulan profile I have restricted attention to two features—the pre-auricular advance of the lower alveolar point and of the point of the chin—its most advanced point (K, L). Measurements of these two projections are given in Table IX. A full consideration would require a comparison of these two projections with those of the upper jaw and zygomatic arch, but I shall deal now with only the mandibular projections. We at once notice a remarkable difference between the Chinese and Loulan measurements. In the Loulan type the projection of the chin is 92·3 mm. —1·3 mm. more than the lower alveolar point, whereas in the Chinese the total chin projection is only 77 mm. and is 8 mm. less than the lower alveolar projection. In the Loulan type there is a positive chin projection—only 1·3 mm., whereas in the Chinese skull there is a minus degree of 8 mm. In the British face the chin has a positive development of 10 mm.; in the Asiatic races included in Table IX the point of the chin usually falls behind the lower alveolar point. While the estimation of the chin projection by this method does bring out certain racial traits, there is one circumstance which must be kept in mind. In primitive races the jaws tend to grow in a *forward* direction, away from the plane here used as a base, but among peoples which have been for long subjected to conditions of civilization—as amongst Europeans and Chinese—there is a tendency for the face to become elongated in a downward direction and for the chin region of the mandible to be depressed downward and backward upon the larynx, thus producing a retrognathism. Further, the prominence of the chin, as in the British skull, may be due not so much to a positive growth of the chin as to a retrocession of the lower alveolar margin. Until we adopt some such method as is outlined here we cannot hope to make progress in our technique of racial discrimination.

An analysis of the full-face view of the skull—using the mid-vertical (sagittal) plane as a base—also brings out many modes for the analysis of race, but I do not propose to discuss these now, as the main points are brought out by the transverse measurements of the face given in various tables. The mean widths of the male Loulan full face are represented in Text-fig. 5. I intended to superimpose on it a corresponding composite made from 10 Chinese skulls, but the differences in most parts were not sufficient to permit a clear separation of the two outlines.

In order to summarize the head characters of the Loulan people, I give in Text-fig. 6 a composite profile of the three male skulls—which represents the means of all measurements and markings. The form of this profile is such as leads us to expect

a skull which will fall well within the brachycephalic group, but when a composite outline of the occipital aspect is examined (see Text-fig. 7, drawn on the Frankfort plane), we find the sides are compressed and the skull relatively narrow. The mean length is 180·3 mm., the mean maximum width is 139·6 mm. The roof is high, the highest point being situated directly over the meatus, on the vertical mid-meatal or auricular plane, the mean auricular height being 121 mm., the bregmatic 118 mm. From the highest point of the crown the roof slopes into the

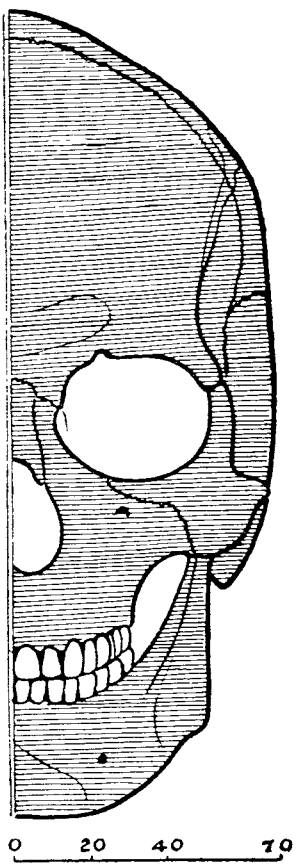


FIG. 5.—A COMPOSITE DRAWING OF THE LEFT-HALF OF THE LOULAN FACE, COMBINING THE MEAN MEASUREMENTS OF THE THREE LOULAN MALES. (FRANKFORT PLANE.) (½.)

forehead and backwards into the occiput. The occiput is not flattened as in typical Uzbeg and Tanjik skulls, but is slightly domed or capped. The cerebellar floor under the occiput dips down, cup-like, 27 mm. below the Frankfort plane. The face is regular and thrown well forwards.

In the Loulan skull the glabella projects 94 mm. in front of the vertical trans-meatal plane; the most projecting point of the occiput lies 85 mm. behind this plane, but its level, in the Frankfort plane, is 8 mm. below that of the glabella (Text-fig. 6).

In the Loulan skull, 47·2 per cent. of total length is post-auricular. In a typical Uzbeg skull, the pre-auricular length is 90 mm., post-auricular 73 mm., the post-auricular length being only 44·8 per cent. of the total length; this is due to the flattening of the occiput. If, on the other hand, the occipital aspect of the Uzbeg skull is superimposed on the Loulan, its sides are seen to swell beyond those of the

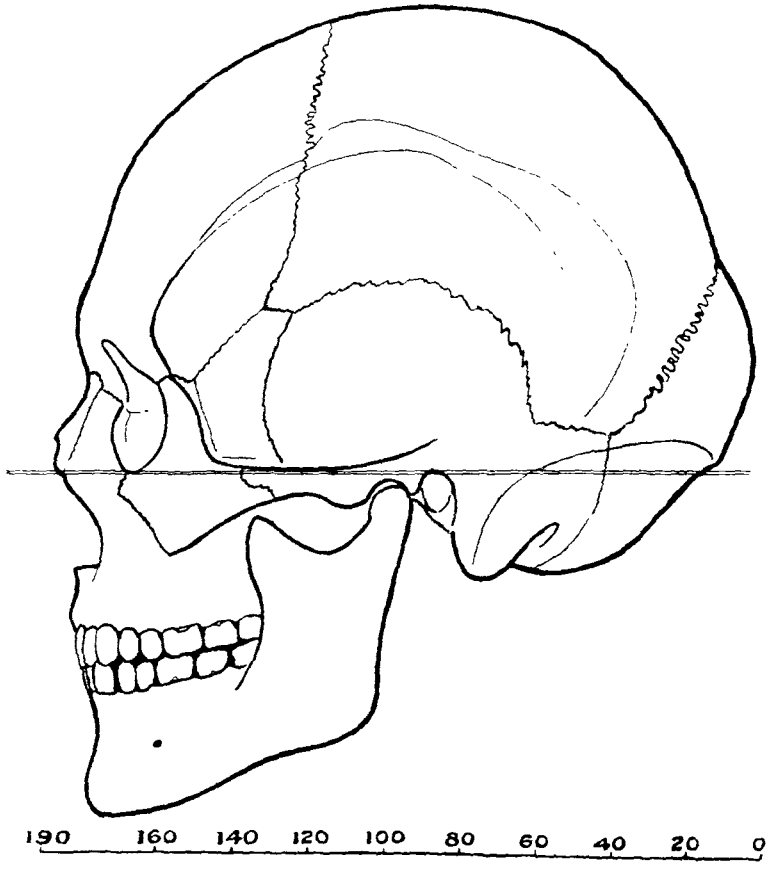


FIG. 6.—COMPOSITE PROFILE OF THE LOULAN SKULL, BASED ON THE MEAN MEASUREMENT OF THE THREE MALE SKULLS NOS. 1, 2, 3. (× ½.)

Loulan, for the maximum width of the Uzbeg type is 152 mm.—a highly brachycephalic specimen. Nevertheless, the Loulan type is intermediate in its form between the Uzbeg and Chinese type, but nearer to the Chinese than to the Uzbeg in dimensions.

In the 10 Chinese skulls used here for comparison, the mean pre-auricular length was 94·5 mm., the mean post-auricular 85 mm., the latter forming 47·4 per cent. of the total length—the same proportion as in the Loulan. On the other hand, the post-auricular length in Sumerian skulls was 49·9 per cent. of the whole, while in the Punjab it was 47 per cent. How far the position of the auditory meatus will

help us to discriminate racial types remains to be proved, but so far as my investigations have gone, they show that this is a relationship which should be investigated and registered.

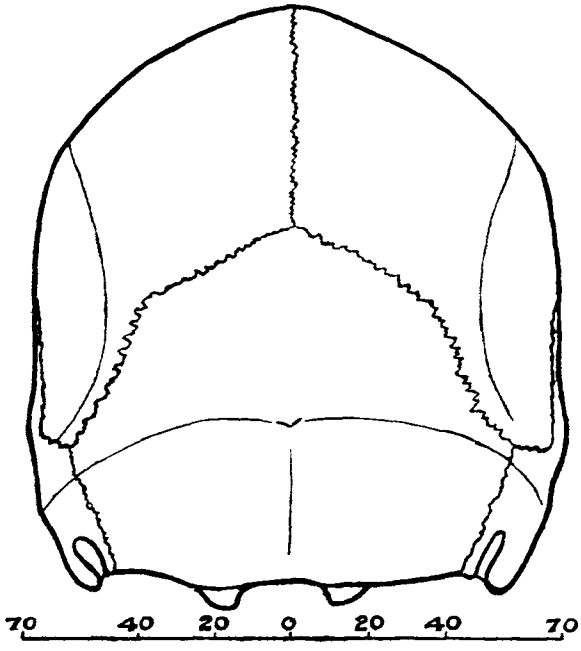


FIG. 7.—OCCIPITAL ASPECT OF THE LOULAN SKULL BASED ON THE MEANS OF THE THREE MALE SKULLS. (FRANKFORT PLANE.) ($\times \frac{1}{2}$.)

Summary.

In this paper are described five skulls which Sir Aurel Stein obtained during his third expedition from ancient cemeteries in the north-eastern region of the Taklamakan desert, Chinese Turkestan—cemeteries which were not in use after the earlier centuries of the Christian era. Descriptions and measurements of the skulls are given ; four were of males, one of a female. It is inferred that all five represent a single people. The skulls have been compared with some from cemeteries at the western end of the Taklamakan and with others of natives of Turkestan. To the type of skull found by Sir Aurel Stein in the ancient cemeteries of Loulan the name Loulan has been given. A search for the Loulan type amongst living peoples has failed to find one which is identical, but the living inhabitants along the southern fringe of the Taklamakan provide the nearest approach to the type. The Loulan type shows both Mongoloid and Caucasoid characters : it is an intermediate type. This type, in the writer's opinion, is to be explained not by hybridity but by the natural process of evolution. Attention is drawn to the great racial divide which separates peoples of Mongoloid stock from the other stocks of southern Asia and of Europe ; on each side of it occur zones of intermediate types. As the Taklamakan

is situated on, and forms part of, the great racial divide, it is to be expected that a people such as the Loulan folk should be of an intermediate character. They bridge the gap which lies between Mongoloids of the Kirghiz type with the Iranian type of the Pamirs and Persia. Further, the writer has applied certain new methods for measuring and registering the racial features of the face.

MEASUREMENTS OF THE LOULAN SKULLS.

TABLE I.

Lengths and Widths.

No.	A	B	C	D	E	F	G	H	J	K
1 (L.T. 03)	181	179	172	135	133	130	107	121	98	75
2 (L.S. 2. 07)	174	172	169	139	128	135	112	121	97	79·9
3 (Ying. III. 1. 01) ...	186	177	173	145	134	138	111	124	96	78
4 (N. IX. 01)	178	179	169	133	132	126	103	110	87	74·7
5 (Turfan)	188	—	—	140	—	—	—	—	105	74·4

Lengths.—A. Glabello-occipital. B. Ophryo-occipital. C. Glabello-lambda.

Widths.—D. Squamo-parietal. E. Biparietal. F. Between anterior ends of masto-parietal sutures. G. Between posterior ends of masto-parietal sutures. H. Maximum frontal width. J. Minimum frontal width. K. Cephalic index.

TABLE II.

Heights and Base Measurements.

No.	A	B	C	D	E	F	G	H	J	K
1	138	118	123	103	105	102	102	129	73	—
2	138	115	123	100	103	101	103	135	66	—
3	145 (?)	131	135	106	103	105	97	141	85	—
4	125	106	112	97	90	99	91	127	80	—

A. Basi-bregmatic height. B. Bregma above Frankfort plane. C. Radius-centre of meatus to bregma. D. Radius-centre of meatus to glabella. E. Radius-centre of meatus to gnathion. F. Basion to nasion. G. Basion to gnathion. H. Width of neck—widest bi-mastoid diameter. J. Antero-posterior fixation of neck—the distance between inion and the mid-point of a line joining the anterior borders of the mastoid processes—at lower border of tympanic plates.

TABLE III.

Facial Widths.

No.	A	B	C	D	E	F	G	H	J	K
1	112	99	115	128	100	116	96	27	24	23
2	112	103	125	135	99	126	95	26	22	22
3	107	99	123	146	99	132	107	29	25	23
4	99	91	104	120	83	113	—	25	21	19
5	115	106	127	143	104	128	105	—	—	—

A. Bisupra-orbital width—measured between most distant lateral points of angular processes. B. Internal orbital width—measured between inner ends of fronto-malar sutures. C. Bimalar width—measured between angles on temporal borders of malar bones. D. Bizygomatic width. E. Bimaxillary width—measured between lower ends of malo-maxillary sutures. F. Bicondylar width of mandible. G. Bigonial width of mandible. H. Inter-orbital width—width of inter-orbital process immediately above "os planum" of lachrymal. J. Bidacryal width. K. Binasal width—measured between the points of attachment for "tendo oculi."

TABLE IV.

Facial Lengths of Orbit and Nose.

No.	A	B	C	D	E	F	G	H	J	K
1	64	102	62	30	31	31	40	38	46	26
2	67	110	65	34	31	32	41	40	47	27
3	83	135	76	35	38	36	39	39	57	28
4	51	—	—	—	31	32	36	36	43	21
5	75	130	73	34	37	—	41	—	57	27

A. Naso-alveolar height. B. Naso-gnathion height—nasion to lowest point of mandibular symphysis. C. Maxillary height—level of nasal sill to lower point of symphysis. D. Height of symphysis. E. Height of right orbit. F. Height of left orbit. G. Width of right orbit. H. Width of left orbit. J. Nasal height. K. Nasal width.

TABLE V.

Palatal and Dental Measurements.

No.	A	B	C	D	E	F	G	H	J	K
1	53	42	65	50	43	50	34	64	18	9
2	50	41	66	45	39	50	32	65	18	0
3	51	41	68	50	47	50	29	65	26	0
4	31	31	51	42	39	—	—	—	5	?

A. Antero-posterior diameter of dental arcade measured from a point between the anterior surfaces of the upper central incisors to the mid-point of a line joining the posterior borders of the last molar teeth. B. Bicanine width measured between lateral surface of upper canines. C. Bimolar width measured between outer surfaces of second pair of molars. D. Length of palate measured from a point between hinder borders of upper central incisor sockets and base of palatal spine. E. Width of palate measured between inner margin of sockets for second pair of molars. F. Length of lower dental arcade. G. Lower bicanine diameter. H. Lower molar diameter. J. Depth of palate at vault—between the second pair of molars. K. Number of carious teeth.

TABLE VI.

Arch Measurements.

No.	A	B	C	D	E	F	G	H	J
1	117	127	124	108	116	102	22	24	24
2	125	116	114	112	106	97	22	23	24
3	136	113	111	123	113	96	24	26	26
4	123	112	106	105	112	88	28	22	28

A. Nasion-bregma along arch of frontal. B. Bregma-lambda along arch of parietal. C. Lambda-oposthion along arch of occipital. D. Chord of nasion-bregma arch. E. Chord of bregma-lambda arch. F. Chord of lambda-opisthion arch. G. Sine of nasion-bregma arc. H. Sine of bregma-lambda arc. J. Sine of lambda-opisthion arc.

Table VII.

Measurements of Mandible, Foramen Magnum, and Mastoid Process.

	No.	A	B	C	D	E	F	G	H	J	K
1		34	76	54	65	28	20	36	28	32	10
2		36	76	51	61	28	19	37	31	29	11
3		33	72	55	71	29	15	37	34 (?)	30	9
4		—	—	—	—	—	—	32	31	23	—

A. Minimal width of ascending process of mandible. B. Distance from masseteric point on lower border of ascending ramus to highest point on articular surface of condyle. The masseteric point is the mid-point of the masseteric convexity on the lower border of the mandible. C. Distance between masseteric point and deepest point of sigmoid notch. D. Distance of masseteric point from tip of coronoid process. E. Depth of mandible at 2nd molar tooth. F. Thickness at same point—at right angles to measurement E. G. Antero-posterior diameter of "foramen magnum." H. Width of "foramen magnum." J. Tip of left mastoid below Frankfort plane. K. Distance which the point of the chin projects in front of alveolar border when mandible rests on its lower border.

Table VIII.

Zygomatic and Malar Arch Measurements. (*See Text-fig.* 3.)

	A	B	C	D	E	F
No. 1 (L.T. 03)	79	73	81	75	25	43
,, 2 (L.S. 2. 07)	80	72	84	73	26	44
,, 3 (Ying. III 1. 01)	83	76	85	77	26	47
,, 4 (N. IX. 01)	78	74	80	73	18	37
Mean of 1, 2, 3	80·3	73·6	83·3	75·0	25·6	44·6
,, 10 Chinese	79·3	74·4	82·5	72·8	25·0	43·0
,, 5 Sumerian	79·0	74·0	84·0	73·0	26·2	46·2
,, 10 British	76·9	71·3	80·5	69·8	24·3	43·9

Table IX.

Measurements of Facial Projections. (*See Text-fig. 4.*)

	A	B	C	D	E	F	G	H	J	K	L
No. 1	73	72	98	96	89	90	92	97	97	94	97
,, 2	68	69	96	93	87	88	92	94	97	93	99
,, 3	70	70	102	101	86	93	95	92	91	86	79
,, 4											
V	70·5	70·3	99·0	97·0	87·3	90·3	93·0	94·3	95·0	91·0	92·3
VI	75·0	72·0	96·5	93·5	84·5	89·0	94·5	89·0	93·5	85·0	77·0
VII	70·0	70·0	108·0	99·0	92·5	91·0	96·5	97·5	99·0	98·0	97·5
VIII	72·5	70·0	103·5	99·0	87·0	95·5	98·0	92·5	94·5	88·0	87·0
IX	69·0	66·5	98·0	94·5	85·0	91·0	96·0	90·5	91·5	89·0	82·0
X	72·0	72·5	98·0	95·5	90·0	91·0	95·0	95·5	101·5	94·5	92·5
XI	69·0	68·0	100·0	94·5	87·5	91·5	96·5	91·0	92·5	90·0	100·0

V = Mean of 3 Loulan male skulls.
VI = ,, 10 Chinese ,,
VII = ,, 5 al'Ubaid ,,
VIII = ,, 5 Punjabi ,,
IX = 5 Dravidian male skulls.
X = 10 Negro ,,
XI = 10 British ,,



FIG. 1



FIG. 2.



FIG. 3



FIG. 4

FIGS. 1 AND 2.—PROFILE AND FULL-FACE VIEWS OF THE DESICCATED HEAD OF A MAN FROM THE CEMETERY OF ASTANA, TURFAN. (DRAWN BY E. SMITH.) ($\frac{1}{3}$)

FIGS. 3 AND 4.—PHOTOGRAPHS OF THE SAME HEAD, GIVING ACCURACY OF DETAIL.

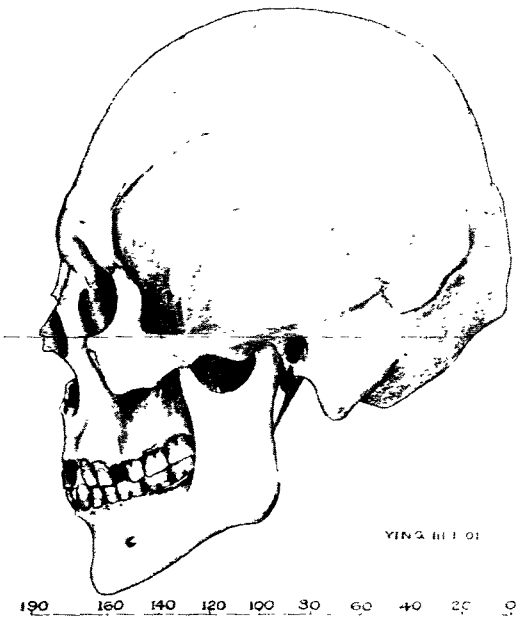


FIG. 1.



FIG. 2

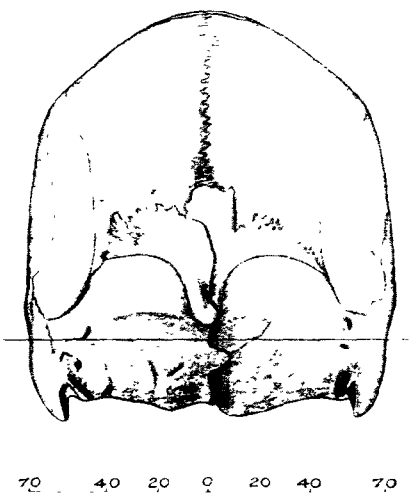


FIG. 3.



FIG. 4

FOUR VIEWS OF A MAN'S SKULL FROM THE CEMETERY AT YING-PAN. IT IS NO. 3 IN THE TABLES OF MEASUREMENTS GIVEN HERE, AND WAS MARKED YING. III. 1. 01 BY SIR AUREL STEIN. ($\frac{1}{3}$)

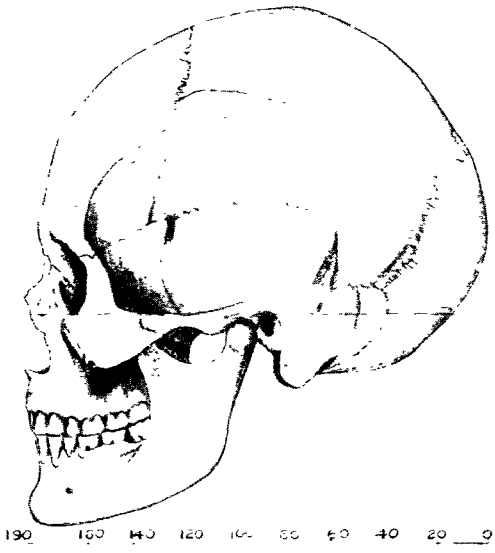


FIG. 1.



FIG. 2.

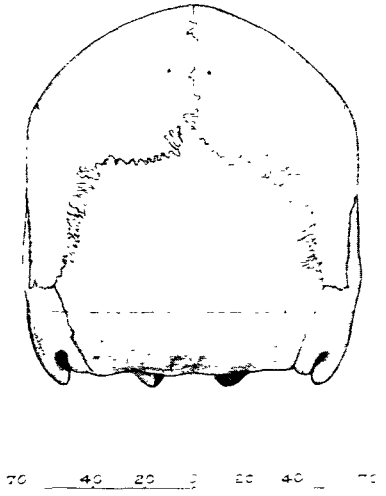


FIG. 3.

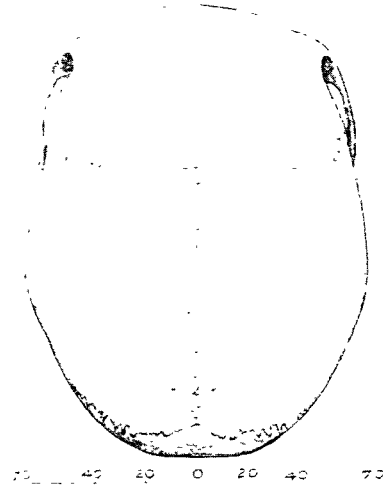


FIG. 4.

FOUR VIEWS OF A MAN'S SKULL MARKED L. T. 03 (NO. 1 OF THE TABLES OF MEASUREMENTS) FROM THE CEMETERY AT LOULAN

HUMAN SKULLS FROM ANCIENT CEMETERIES IN THE TARIM BASIN.

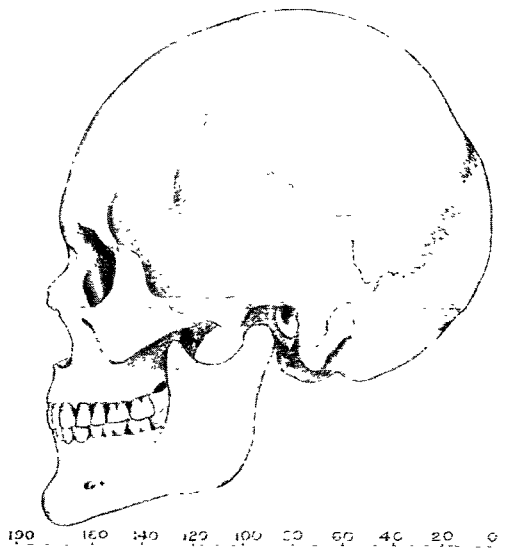


FIG. 1.



FIG. 2.

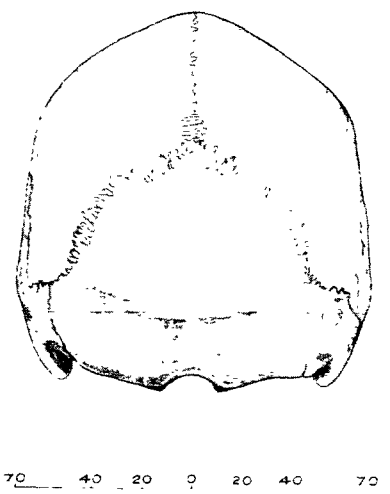


FIG. 3.



FIG. 4.

FOUR VIEWS OF A SKULL MARKED L.S. 2 07 (NO. 2 OF THE TABLES OF MEASUREMENTS) FROM THE CEMETERY AT LOULAN

HUMAN SKULLS FROM ANCIENT CEMETERIES IN THE TARIM BASIN.

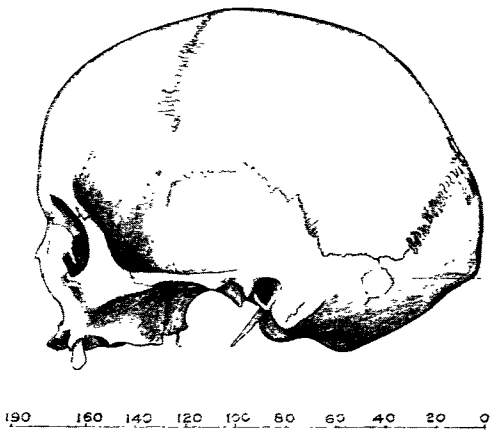


FIG. 1



FIG. 2

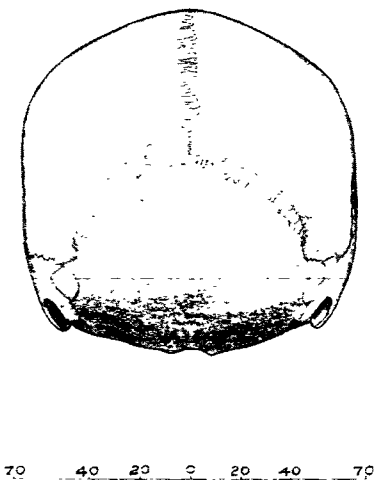


FIG. 3

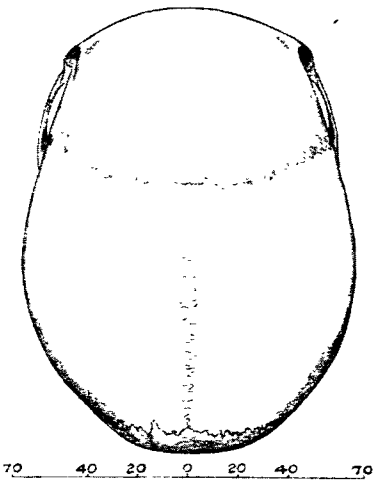


FIG. 4.

FOUR VIEWS OF A WOMAN'S SKULL MARKED N IX 01 (NO. 5 OF THE TABLES OF MEASUREMENTS), FROM NIYA

HUMAN SKULLS FROM ANCIENT CEMETERIES IN THE TARIM BASIN.

DYING GODS AND PUBERTY CEREMONIES.

By G. Róheim.

I.—The Youthful Gods.

In the myths and ritual of various Greek and Oriental gods we find certain common features. These are :—

(1) Death and resurrection, descent to the nether world followed by the return of the hero and heroine.

(2) Their rites are esoteric, reserved to initiates.

(3) Women or effeminated men are prominent in their cult.

(4) The name of the god indicates his youth.[1]

(5) The name of the god is the name of a musical instrument or, at least, the god is specially connected with music (*cf.* below).

(6) The god is accused of homosexual relations or, at least, of effeminate bearing.

(7) The god or his father commits incest.

(8) Phallic rites are prominent in the ritual.

(9) Female devotees sacrifice their virginity, males their virility, to the god.

(10) The god is a tree-spirit; after his death as a human being, he is reborn as a flower or eatable vegetable. A festival celebrates and imitates the marriage and death of the god with the aim of magically promoting the life-process in nature.[2]

[1] Dionysos = "the young Zeus" (Kretschmer, *Aus der Anomia*, 1890, p. 25; J. E. Harrison, *Themis*, 1912, p. 48). Hyakinthos = "invenculus" (Brugmann, *Grundriss*, I, p. 261: II, p. 237; Wide, *Lakonische Kulte*, p. 290). Kouretes = "young men" (J. E. Harrison, *l.c.*, p. 19; *Annual of British School at Athens*, XV, 1908, p. 308). Dumuzi-abzu (Tamuz) = "true son of the deep waters" (Zimmern, in *Abh. d. phil. hist. Kl. Sachs. Ges. d. Wiss.*, XXVII, p. 704). *Cf.* the Mexican Piltzintecutli = "the young prince" (Loewenthal in *Mitt. d. Anthr. Ges. in Wien*, LII, 1922, p. 20).

[2] The gods we refer to are Adonis, Attis, Osiris, Dionysos, Hyakinthos, Orpheus, etc. For the facts quoted above, *see* the well-known works of Frazer, Mannhardt, Hepding, Baudissin, Nilsson, Gruppe, and Harrison; the articles in Roscher's *Lexicon* and *Pauly-Wissowa*, and other works of reference (some to be quoted below). *Cf. also* C. Clemens, "Zum Ursprung der griechischen Mysterien," *Anthropos*, XVIII, XIX, p. 431; Winterstein, *Ursprung der Tragödie*, 1925; Rostrup, *Attic Tragedy*, 1923. A homosexual dream is narrated in connection with Gilgamesh, a heroic double of Adonis-Tamuz (Ungnad Gressmann, *Das Gilgamesh-Epos*, 1911, Tafel I, Z. 232, p. 14), and between Horus and Seth (Erman, "Beiträge zur ägyptischen Religion," *Sitzungsberichte der kngl. preuss. Ak. d. Wiss.*, XLV, 1916, p. 1143). As for the connection between (attempted) incest and castration, *see* Clemens and Arnobius: quoted by Hepding: *Attis*, 104, 105. *See also* the important remarks of Radau in *Assyriolische und Archeologische Studien*, H. v. Hilprecht gewidmet, 1909, p. 404. With regard to Osiris, *see* Brugsch, *Religion*, p. 581, and Maspero, *Contes*, p. 9.

II.—THE SPIRIT OF THE BULL-ROARER.

It has been pointed out by Reik, that Attis, Adonis, etc., the youthful gods who die and are reborn, for whom the women mourn, and whose resurrection gladdens the hearts of their worshippers, represent the young men of a savage tribe.[1]

All these cults were what the ancients called mysteries, *i.e.* confined to a certain number of initiates. The connection between these vegetation-cults and initiation rites is specially evident in the case of the Kouretes and Korybantes, whose mysteries are regarded as Phrygian and closely connected with Attis and Kybele by Clemens.[2] The Korybantes, at any rate, are the Phrygian equivalents of the Kretan Kouretes.[3]

The localization of the myth at Crete and in Phrygia seems to indicate that it belonged to a Pre-Hellenic stratum of population, a people who had an Oriental culture and were probably racially connected with the inhabitants of Asia Minor.

The Kouretes and their rites have been studied and explained brilliantly and convincingly as tribal initiation ceremonies by J. E. Harrison.[4] She relies especially on the part played by them in the myth of the infant Dionysos as protectors of the deity, and explains the Titanes or "white clay men," the death and revival of the infant Dionysos, and the toys (bull-roarer) he plays with by reference to savage initiation ceremonies.[5] There is historical evidence for the Cretan initiation ritual overlooked by Miss Harrison, and, as we shall see, wrongly adduced in this connection against the death and rebirth ritual by Farnell[6]: σκότοι, "those who lived in the dark house," was the epitheton of Cretan youth before they were brought out into the light of day, *i.e.* admitted to the status of adult men.[7] Probably the word refers to the period of seclusion in a dark hut.[8]

According to a very probable inference of Höfer the festival of Ἐκδυσία, or "bringing forth," was celebrated at the conclusion of this "period de marge," when the boys and girls were led back to the light of day from their initiation huts.[9] The mythical origin of the festival is recounted by Antoninus Liberalis. It was celebrated in honour of Leto Phytia, evidently a goddess of growth, for she had occasioned the growth of male genital organs to a girl and thus transformed her into the hero Leukippos. This Leukippos was probably the genius of female initiation and

[1] Th. Reik, *Probleme der Religionspsychologie*, 1919, p. 123. (*Cf.* (1)–(5) above, p. 181.)

[2] Clemens, *Protepticon pros Hellenas*, p. 15. (I have to thank my friend Dr. Marót, University Lecturer in Greek Philology, for his kind aid in dealing with various Greek authors.)

[3] J. E. Harrison, *Themis*, 1912, p. 26.

[4] J. E. Harrison, "The Kouretes and Zeus Kouros," *Annual of the British School at Athens*, XV, 1908, p. 308. Idem, *Themis*, 1912, p. 19.

[5] J. E. Harrison, *Themis*, 1912, pp. 14, 16. (*Cf.* her remarks on pp. 19, 20.)

[6] L. R. Farnell, "Magic and Religion in Early Hellenic Society," *A.R.W.*, XVII, p. 33.

[7] Eur., *Phoen.*, 1539 *sq.* "School." Eur., *Alk.*, 989.

[8] *Cf.* for instances, Ploss, *Das Kind*, 1912, p. 717; II, p. 733. Frazer, *Balder the Beautiful*, 1913, I, pp. 22–100; II, pp. 225–78.

[9] Hofer, *Skotia*. Roscher's *Lexikon*, p. 1019.

defloration, for the brides slept before his image the night before they were married.[1] The androgynous hero points to a rite which included a change of dress,[2] and this, as we shall show below, was a frequent feature of initiation ceremonies. The goddess to whom these rites were dedicated, both under her name of Aphrodite Skotia[3] and under the guise of Leto Phytia, was a mother-deity, essentially identical with the Mountain Mother, the Great Mother of the Cretan-Phrygian tribes.[4]

It is therefore very probable that, notwithstanding Nilsson and Gruppe,[5] Endemann is quite right in interpreting the Ekdusia as a festival of "pulling out" or "birth,"[6] *i.e.* as a festival of rebirth after the sojourn in the symbolic womb represented by the dark initiation house. The actual initiation ceremony of the Korybantes, the Phrygian equivalents of the Kouretes, has been recorded by Plato. The novice was seated on a throne while the Kouretes or Korybantes danced round him.[7] The connection between this ritual and the principal mythical function of the Korybantes has not escaped the notice of Immisch, who regards the novice as a hypostasis of the infant Zeus, and the initiators as representatives of the mythical Korybantes.[8] The well-known myth to which he alludes tells us how Rhea gave birth to Zeus in the cave of the Dictae at Krete, how the infant was nourished by the milk of the goat Amaltheia and the nymphs called Melissai, "the bees," and how the Kouretes by the noise made with their dance prevented the child-swallowing monster Kronos from hearing the shouts of the infant. Rhea gave him a stone to swallow and made him believe that he had swallowed his own child.[9]

The myth re-acted in initiation ritual is a typical *aἴτιον* of a puberty ceremony. This is the usual explanation of puberty rites: a monster swallows the youths who are protected against this demon by the initiators.

At the Wiradjuri Burbung the boys are told that Daramulun will kill them if they tell any of the secrets.[10] This is the being who kills the youth, cuts them up, and restores them to life minus a tooth.[11] According to the Turbal, it was the medicine men themselves who swallowed the youths during these ceremonies.[12] At the Dora ceremonies, concealed men (probably representing supernatural beings)

[1] *Mythographi Graeci*, ed Martini, vol. II, Fasc. 1, 1896. Antonnus Liberalis, XVII.

[2] *Cf.* Dummler, *Philologus*, 56 97 22. Nilsson, *Griechische Feste von religiöser Bedeutung*, 1906, p. 370.

[3] *Etymologicum Magnum*, 543, p. 48.

[4] Nilsson, *l.c.*, p. 370, note 3.

[5] Gruppe, *l.c.*, p. 1248. Nilsson, *l.c.*, p. 371, note 1.

[6] Endemann, Roscher's *Lexicon*, II, p. 1969.

[7] Plato, *Euthydem.*, 277 (Cap. VII). S. Eitrem, *Opferritus und Voropfer der Griechen und Römer*, 1915, p. 54.

[8] Immisch, in Roscher's *Lexicon*, II, p. 1010.

[9] Apollodori, *Bibliotheca*, I, pp. 5, 6, 7.

[10] A. W. Howitt, *The Native Tribes of South-East Australia*, 1904, p. 587.

[11] Howitt, *l.c.*, p. 589.

[12] Howitt, *l.c.*, p. 596.

rush upon the boys, who are told by the initiators (Quonmies) to stand still and not be frightened.[1] The first bull-roarer, or Gayandi, was transformed into a monster like a "piggiebillah," and he threatens the youths with destruction at initiation.[2]

The Mungarai have a tradition of a "very big man" called Kunapippi who, like Kronos, lived in the far-away times before anybody else came into existence. He is said to have been the first to teach the initiation ceremonies, and the sacred sticks used in these ceremonies are still called Kunapippi. Like Kronos, he killed and devoured all the boys, excepting two, who, like Zeus, managed to escape and then to kill the monster.[3] The Kai call the bull-roarer Ngosa, *i.e.* "Grandfather," and regard him as a being who is always after the youths and wants to swallow them. The men who initiate them are called "vize," and, like the Kouretes in Phrygia, it is they who protect the novice against the murderous designs of the monster.[4] The clamour made by the Korybantes in their dances may therefore originally have had a double meaning: that of protecting the youths of the tribe against the monster, and of terrifying the women who are not allowed to penetrate into these mysteries.[5]

Whether we interpret the name as the "dancers"[6] or as "the wearers of the peaked hat,"[7] both denominations are equally characteristic of secret societies like the Duk-Duk and similar organizations evolved out of puberty ceremonies. We see therefore that the mysteries of the Korybantes belonged to the puberty ceremony type, and, on the other hand, we may note the myth of celery springing up from the blood of one of the brother Korybantes who had been killed by his brethren,[8] which connects these rites with the cults of Osiris, Adonis, etc.

For further points of contact we shall turn to the Son-Gods of the Orient. We know that Adonis the "Lord" meant the Babylonian Tamuz, and we ought to add that the "Lord" was *a* Tamuz, one of the son-gods of primitive Semitic tribes. But like the "great master" (Biamban) with the secret name of "Daramulun," which means "a musical instrument, the bull-roarer,"[9] so Adonis the Phœnician "Lord" was called Γίγγρας, a word which seems to have meant "flute" in the

[1] Howitt, *l.c.*, p. 603. (*Cf.* Spencer and Gillen, *The Northern Tribes of Central Australia*, 1904, pp. 499–502.)

[2] K. L. Parker, *The Euahlayi Tribe*, 1905, pp. 67, 72.

[3] B. Spencer, *Native Tribes of the Northern Territory of Australia*, 1914, pp. 213–17.

[4] Ch. Keysser, *Aus dem Leben der Kaileute*. Neuhauss, *Deutsch Neu-Guinea*, 1911, III, p. 37. St. Lehner, *Bukaua*, *ibid.*, pp. 406, 407.

[5] A third (unconscious) meaning would be an imitation of the noise made by the new-born initiate.

[6] *Cf.* Pott in *Kuhns Zeitschrift*, VII, p. 241.

[7] Immisch in Roscher's *Lexicon*, II, 1607, p. 1608. J. E. Harrison, *Themis*, 1912, p. 528.

[8] Clemens Alexandrinus, *Protr. pros. Hell.*, II, p. 19. Arnobius, *Adv. nat.*, V, p. 19. Firmicus Maternus, *De errore*, p. 11.

[9] Howitt, *l.c.*, p. 528.

Phœnician language.[1] At Pergamon he was called Ἀβωβας, a word that has been derived from *abub* (*ambub*), the Semitic name of the flute.[2]

Now, if we know anything about primitive tribes for certain it is this: *a hero who dies and is reborn, and who is identical with a musical instrument, is an initiation-spirit*, the representative of the initiates. Indeed, there is reason to believe that Adonis was not the only flute-hero of our cycle. The Greek *cinyra*, "lyre," with which the name of Kinyras is connected, comes from the Phœnician *kinnor*, a word which seems to mean both a lyre and a special form of double flute with a plaintive wailing note, hence in folk etymology the name of the hero became connected with the Greek word κινυρός, whining, mournful.[3] Like his son and double Adonis, and Attis the Phrygian equivalent of the Semitic Adonis, he is represented as a favourite of the great Asiatic Mother-Goddess.[4] The flute is one of the characteristic musical instruments of the Attis cult, and we also find it in prominence in the ritual of the Babylonian Tamuz.[5] Similar flute-heroes are found in South America. Many years ago, the Yahuma tell us, there was a young boy called Milo-maki (*maki* = son), who sang so beautifully that all the people came to listen to him. But those who had heard him sing and then ate fish died instantly. So they decided to burn him, and the Paxiuba palm grew from his ashes. Flutes are made from the wood of this tree, and these repeat the beautiful songs of Milo-maki. When the fruits are ripe these flutes are blown by the men in honour of Milo-maki the creator of all fruits.[6] This is the festival of Yurupary, characterized by the self-inflicted wounds of the men which correspond to the proceedings of the Galloi.[7]

Boys are only permitted to attend after having passed the initiation which consists of flogging,[8] and the uninitiated may not hear the sound of the flute on pain

Pollux, *Onomasticon*, IV. 76; ed. Bethe, p. 223. Athenæus, *l.c.*, IV. pp. 76–174 *f.* *Cf.* Baudissin, *Adonis und Esmun*, pp. 84, 85; Gruppe, *l.c.*, 1, p. 949.

[2] W. H. Engel, *Kypros*, pp. 536–643. Preller, *Griechische Mythologie*, 1854, I. p. 220. Movers, *Die Phönizier*, I. pp. 191–3.

[3] Frazer, *Adonis*, p. 45.

[4] *Cf.* Stoll, *Kinyras*. Roscher, I. p. 1189. The legend of his incestuous intercourse with his daughter is evidently the real reason for the castration of his son, which is the talion punishment of this incest. (Hyginus, *Fab.*, p. 242; Schol ad Clemens, *Pædagogus*, III. Cap. VI. p. 17.) Like Adonis, he is connected with sacred prostitution: it is his daughters, the sisters of Adonis, from whom the custom is derived. (Clemens, *Protreptikus*, II. p. 14; Arnobius, *Adversus nationes*, V. p. 19.)

[5] *Cf.* Hepding, *Attis*, p. 128. Baudissin, *Adonis und Esmun*, 1911, pp. 104, 354. If, therefore, Adonis is Γάγγας, "the flute," and his father Cinyras, "the lyre or double-flute," may not the name of the goddess Kybele be regarded as a feminine form of the kymbalon, the instrument which plays such a prominent part in her cult? (*Cf.* R. Eisler, "Kuba-Kybele," *Philologus*, LXVIII, 1909, p. 130.)

[6] "Attin vero hoc ipsum volunt esse quod ex frugibus nascitur. . . . Quid hoc frugibus profuit ut fletus suos annuis ululatibus geminent." Firmicus Maternus, *De errore*, III. (*Cf.* Theocritus, *idem*, XV, p. 142. Adonis, the corn, returning year by year with the Horai.)

[7] *Cf.* "The Day of Blood," Frazer, *Adonis*, p. 221.

[8] Nerry de Santa Anna, *Folk-Lore Brésilien*, 1889, p. 245. Wallace, *Travels on the Amazon*, p. 349.

of death. Yurupary is the spirit of initiation, and the flutes are also called Yurupari.[1] According to the Warramunga, there was a man called Murtu-murtu who made a noise like the roar of the "murtu-murtu," or bull-roarer, and was torn to pieces by the wild dogs,[2] but revived after this in the form of the tree called "nanautba" (*Grevillea* sp.). The wood of these trees is used for the bull-roarer called "murtu-murtu."[3] Daramulun, killed by Baiame for his cruelty to the boys, survives or is resuscitated in the bull-roarer, also called Daramulun, which embodies His voice.[4] Daramulun (the bull-roarer) is also called Biamban (the master), and is the equivalent of Mungan-ngaua = Mamngorak (our father).

It would therefore seem plausible to assume that in prehistoric times initiation ceremonies in Asia Minor were conducted by father and son-descendants (Attis = Papas, the Father; Dumuzi abzu = the true son) *who were also in a special way called "the lord"* (Adon), *or "the male"* (Baal), *and identified with a specific musical instrument sounded at these rites; for instance, the flute* (Ἀδώδας, γίγγρας). Various musical instruments are found in these orgiastic cults. Besides the flute, we find the cymbal, the tympanon, the bull-roarer, all associated with divinities who, like the Korybantes and Dionysos, die and are reborn, or, at least, like Kybele, are connected with myths of death and resurrection.[5]

At Tami the bull-roarer is the "husband," the flutes are his "wives."[6] If Attis-Adonis the husband is a flute, it might be that the wife and mother Kybele was represented by another musical instrument, probably the kymbalon, with which her name is connected, and the tympanon. In this case the mystic saying about having eaten from the musical instruments which represent the goddess,[7] would refer to an act or oral communion with the Mother on the part of the initiate.

[1] Nery de Santa Anna, *Lit.*, p. 244. Koch-Grunberg, *Zwei Jahre unter den Indianern* 1910, II, pp. 292, 293. *Cf.* for these whipping-festivals, W. H. Brett, *Indian Tribes of Guiana*, 1868, p. 156.

[2] In the secret language of the Arunta the initiates call themselves "dogs," "unkura." C. Strehlow, *Die Aranda und Loritja-Stamme in Zentral-Australien*, Veroffentlichungen aus dem Stadtischen Völker Museum, Frankfurt-am-Main, I, p. 63; IV, Teil I, pp. 26–33. On the identity of novice and bull-roarer, *cf.* Strehlow, *l.c.*, p. 51.

[3] Spencer and Gillen, *Northern Tribes*, pp. 434, 435.

[4] R. H. Mathews, "The Burbung of the Wiradthuri Tribes," *Journ. Anthrop. Inst.*, XXVI, 1896, pp. 295, 298. Howitt, *l.c.*, p. 583.

[5] Euripides, *Bacchæ*, 58, 125. Aristoph., *Vesp.*, 119. (The tympanon, an invention of Kybele or the Korybantes.) Strabo, 470, 15. Lucretius, II, 618. Apollonius Rhodius, *Argonaut.*, I, 1134. Orph., *Hymn.*, 41. Herodot., IV, 76. Clemens, *Protr.*, II, p. 17 (Stählin, p. 14, and the Scholion, *ibid.*, p. 302.)

[6] G. Bamler, "Tami in Neuhauss," *Deutsch Neuguinea*, 1911, III, p. 501.

[7] Clemens, Al., *Protr.*, II, p. 15, ed. Stahlin, p. 13. Firmicus Maternus, *De errore prof. r.*, XVIII. (*Cf.* "Schliesslich wird den Madchen wie den Knaben im Poro das Schwerge_lobnus durch Essen des Bundeszauberers abgenommen.") D. Westermann, *Die Kpelle*, 1921, p. 758. (*See also* Dietrich, *Eine Mithrasliturgie*, p. 216; R. Eisler, "Kuba-Kybele," *Philologus*, LXVIII, 1909, p. 129.)

Now, as we might expect in the case of a puberty ceremony, the musical instruments used in these rites are not without sexual associations,[1] and especially in the case of the *flute* it can be shown at least in one given cultural area that it is what we are accustomed to call a *phallic symbol*. At Jasa in Kiwai the men make pan-pipes (piago) between the "moguru" (a sexual ceremony, *cf.* below) and the yam harvest, and every young man carries and plays one.[2] Murup is the name of the masks and of the men-swallowing demon of initiation among the Monumbo. The long flutes which produce the sounds that are represented to the women as the voice of the demon are called "muru-pika danguwatse."[3]

Women are, of course, not permitted to see the sacred flutes, but there is one exception to this rule—the wife of the chief. When the murup-masks come into the village, and the boys are invested with their sacred head-gear, the men assemble in a provisional hut with the chief's wife. Ipsa humi decumbit: viri veterem flautam murup aliquam adducunt et in caput vaginæ mulieris introducunt, saying "we have put this in the hole of a barimbai-tree: the tree trembled and howled."[4] Tum omnes viri adstantes cum femina coeunt.[5] The initiation ceremony of Banaro girls consists in ceremonial defloration by a man of her father's generation who acts as a "spirit" in the presence of the sacred flutes containing the spirit's voice. The child born from this pre-nuptial intercourse is called a "spirit-child," and we may, as the presence of the sacred flutes is essential to the act of ceremonial coitus, again regard the flute-spirit as the fecundating principle.[6] If, therefore, the flute or Adonis-Attis means the male member in these rites, it is just possible that the kymbalon and the tympanon represent Kybele as a personified female organ. The shape and use of the musical instruments lends itself to such a suggestion in both cases, and our interpretation would correspond to the well-recognized meaning of Dionysiac symbolism on the one hand,[7] and to the meaning attributed by Miss Weston to the lance (sword) and cup in the Grail mysteries.[8]

[1] *Cf.* Frazer, *Balder the Beautiful*, 1913, II, p. 277.

[2] Haddon, *Migrations of Culture in British New Guinea*, 1920, p. 7.

[3] F. Vormann, "Tänze und Tanzfestlichkeiten der Monumbo-Papua," *Anthropos*, 1911, p. 419.

[4] For the tree as a symbol of the female genital organ, *cf.* R. Thurnwald, *Forschungen auf den Salomo-Inseln und dem Bismarck-Archipel*, I, 1912, p. 137: "Your body is the trunk of a mango tree," etc., on nearly every page in Thurnwald's book.

[5] Vormann, *l.c.*, p. 427.

[6] R. Thurnwald, *Die Gemeinde der Banaro*, 1921, p. 21.

[7] *Cf.* on the ai ɛr and the sacer in the cult of Dionysos, Clemens, *Protr.*, II, p. 19. Arnobius, *Adv.*, V, p. 28. Eitrem, *Opferritus und Voropfer der Griechen und Römer*, 1915, p. 303. Gruppe, *Griechische Mythologie*, 1906, I, pp. 180, 866.

[8] *Cf.* J. L. Weston, *The Quest of the Holy Grail*, 1913, p. 90. *Idem*, "The Grail and the Rites of Adonis," *Folk-Lore*, XVIII, p. 283. *Idem*, from *Ritual to Romance*, 1919. The Konnai call the iron ring with bells the "mother" of the bull-roarer (Frobenius, *Und Afrika Sprach*, III, p. 100).

However, the theory of the puberty ceremony as the basis of these rites can only be regarded as established if it helps us to explain not only some features but the totality of this ceremonial complex. An almost universal feature of initiation ceremonies is the *mutilation of the genital organ*—circumcision, subincision and its substitutes on the male side; while for the females, we have both similar ceremonies evidently in imitation of masculine rites, and the specifically feminine initiation-rite of *defloration*. As for the male rites, we must consider them in the light of an illuminating paper of Th. Reik, who shows that in initiation we have an unconscious survival of the great conflict fought out in the primal horde between the young pubescent males and the jealous sire or the older generation for dominion over the women. In the bestial pre-human, castration would be the lot of those who were vanquished in the struggle, and circumcision would be a mitigated survival of more radical measures. In the light of this theory, the benevolent protective attitude adopted by the older generation towards youth would be merely a cultural repression of original aggressivity, the latter still manifesting itself in the cruelties inflicted upon the novices at the critical period.[1]

Now, it is remarkable how far this theory is confirmed by Australian tradition.[2] In a Dieri legend the first man circumcised by the culture-heroes is their own father, who dies in consequence of the loss of blood.[3] In other cases we find a tradition according to which the use of the stone knife is a mitigation of a more savage rite. Boys were originally circumcised with the fire-stick and regularly died in consequence.[4] In one variant we are told how the Echidna men, instead of circumcising the boys, used to castrate them.[5] The Bechwana call the uncircumcised "bulls and steers," and say that just as castration has a modifying effect upon the animal operated upon, so the circumcision keeps the sexual passion in bonds. A certain chief broke through the wall that divides psychic similarity and identity, and actually made eunuchs of the men at these ceremonies.[6] We shall therefore come to the conclusion that the self-castration of the Galloi and their fellows is a regressive form of the mutilation originally practised on the male organ at puberty. This regression from a relatively advanced phase in the development of the rite towards a *pre-human* form of savagery is partly explained by the strong mother-identification which characterizes the psychic constitution of the Galloi and other

[1] Th. Reik, "Die Pubertatsriten der Wilden," in his *Probleme der Religionspsychologie*, 1919, pp. 59–131.

[2] Howitt, *l.c.*, p. 645.

[3] Howitt, *l.c.*, p. 651. Spencer and Gillen, *Native Tribes*, pp. 394, 401, 402. Idem, *Northern Tribes*, pp. 399, 405. *See also* H. Basedow, "Subincision and Kindred Rites of the Australian Aboriginal," *Journ. Roy. Anthrop. Inst.*, 1927.

[4] *Cf.* Róheim, *Australian Totemism*, 1925.

[5] Strehlow, *l.c.*, I, p. 8; II, p. 4.

[6] J. T. Brown, "Circumcision Rites of the Bechwana Tribes," *Journ. Roy. Anthrop. Inst.*, LI, 1921, p. 426.

eunuch or homosexual priests of primitive tribes. This feminine attitude is temporary in the case of the novices at puberty ceremonies, but becomes permanent with the Galloi or North American berdaches.[1]

Among the Ba Ila the novices call the initiators "mulumi," *i.e.* husband.[2] In the Kimberley district every youth after initiation is presented with a boy-wife known as "Chookadoo."[3] This custom is widely diffused among tribes with the eight-class system.[4]

On the feminine side, initiation also appears as a sort of castration in so far as defloration, an attack upon the genital organ, evokes similar unconscious attitudes in the female as the idea of castration does in the case of the male.[5]

Among the Banaro the initiation ceremony of girls is the act of defloration by a man who plays the part of a spirit.[6] Practical and theoretical instruction in sexual life is one of the prominent features of girl-initiation ceremonies in Africa.[7]

Lucian tells us that people shaved their heads at the annual mourning ceremony for Adonis at Byblos. Women who refused to sacrifice their hair had to have intercourse with strangers at the festival, and the money they received belonged to the goddess.[8] Lucian was probably mistaken in regarding coitus as a substitute for hair-cutting: it seems much easier to suppose, as Frazer does, that the woman's hair was regarded as a substitute for her person.[9] or that both rites were carried out at the same time and formed part of a festival that was evolved out of female puberty ceremonies. After the first menstruation, when the period of initiation

[1] *Cf.* J. G. Frazer, *Adonis*, p. 428. The female spirit under whose guidance they act is a supernatural projection of the mother; the effeminate Hercules is the slave of Omphale, *i.e.* the navel. Eisler, "Kuba-Kybele," *Philologus*, LXVIII, 1909, p. 138. Rapp, *Kybele*. Roscher's *Lexikon*, II, p. 1657, regards castration as a secondary development of the orgiastic cult. For eunuch priests, *see* F. Karsch-Haack, *Das Gleichgeschlechtliche Leben der Naturvölker*, 1911.

[2] E. W. Smith and A. M. Dale, *The Ila-Speaking Peoples of Northern Rhodesia*, 1920, II, p. 31. *Cf. ibid.*, II, p. 29.

[3] E. T. Hardman, "Notes on some Habits and Customs of the Natives of Kimberley District," *Proc. R.I.A.*, vol. I. S. Ser. e, pp. 73, 74.

[4] Strehlow, *l.c.*, IV, Abt. I, 1913, p. 98. Karsch-Haack, *l.c.*, 82. *Cf.* Tessman, *Die Pangwe*, 1913, II, p. 50. *Cf.* L. Frobenius, *Und Afrika Sprach*, III, 1913, p. 140. Weule, *Wissensch. Ergebnisse ethn. Forschungsreise in den Südosten Deutsch-Ostafrikas*, 1908, p. 111. A. C. Hollis, *The Masai*, 1905, p. 298. Idem, *The Nandi*, 1905, p. 53.

[5] *Cf.* Freud, *Kleine Schriften*, IV, p. 229. A Herero who has been circumcised is called "omusuka rume" = male virgin. Irle, *Die Herero*, 1906, p. 102. *Cf.* Spencer and Gillen, *Northern Tribes*, p. 133; W. E. Roth, *Ethnological Studies*, 1897, p. 174; W. E. Roth, *ibid.*, p. 175.

[6] R. Thurnwald, *Banaro*, p. 19.

[7] Smith and Dale, *l.c.*, II, p. 25. Dudley Kidd, *The Essential Kaffir*, 1904, p. 200. Roscoe, *The Baganda*, 1911, p. 80. A. Werner, *Natives of British Central Africa*, 1906, p. 126. M. Weiss, *Die Volkerstämme im Norden Deutsch Ost-Afrikas*, 1910, pp. 299, 300.

[8] Lucian, *De dea Syria*, p. 6.

[9] Frazer, *Adonis*, p. 34.

and seclusion commences for a Chiriguano girl, her hair is cut short.[1] Just before circumcision the head of a Bakulia girl is shaved.[2] Female puberty ceremonies are connected with a hair-cutting rite among the Herero.[3]

Of course, we do not forget that shaving the head is quite as frequent in mourning as in initiation ceremonies, but it is the co-existence of head-shaving and coitus that is more in accordance with the puberty-ceremony theory. We do not think it is necessary to separate this rite from the similar sexual dedication to Mylitta (Byblian Aphrodite, Kybele) described by Herodotus and Strabo for Babylonia and clearly recognized by E. S. Hartland as a puberty ceremony.[4] From other sources we learn that there were mysteries of the Cyprian Aphrodite, which were said to have been instituted by Cinyras, king of Paphos and father of Adonis. These mysteries were preceded by a regular initiation. Sexual matters no doubt formed their staple teaching, and what classical authors and early Christians would call prostitution would be practised.[5]

III.—Initiation and Vegetation Ritual.

Perhaps some readers will feel inclined to acknowledge a degree of probability for the puberty ritual theory, but object that it fails to explain certain prominent features in the cult of these dying and resuscitated heroes, notably the features which Frazer has laid especial stress upon: these heroes are closely connected with vegetation both as tree-spirits and as spirits of the corn. We find, however, that the tree and vegetation play a very similar part in these rites and puberty ceremonies.

In the Phrygian ritual dedicated to the "Mother of the Gods," a pine-tree was felled year by year and the image of a youth attached to its trunk. The same tree is used in the festival of Isis, and the image of Osiris is buried in the excavated part of the trunk. Firmicus Maternus compares these to the cult of Proserpine where "cæsa arbor in effigiem virginis formamque conponitur, et cum intra civitatem fuerit inlata, quadraginta noctibus plangitur, quadragesima vero nocte conburitur."[6] In all three cases we find that the ceremonial felling of a tree forms the nuclear element of the whole ritual, but on closer investigation *we can distinguish the presence of two meanings, one masculine and the other feminine, for the tree in these cults.* In the case of Attis, we know that the pine tree which figures in the ritual embodies Attis himself, and the felling of the tree is probably equivalent to the self-

[1] E. Nordenskiold, *Indianerleben*, 1912, p. 210.

[2] M. Weiss, *Die Volkerstamme im Nordw. Deutsch Ost-Afrikas*, 1910, p. 300.

[3] Irle, *Die Herero*, 1906, p. 104.

[4] Herodotus, I, p. 199. Strabo XVI, 1, 20. E. S. Hartland, *Concerning the Rite at the Temple of Mylitta* (Anthropological Essays presented to E. B. Tylor, 1907), p. 189.

[5] Hartland, *l.c.*, p. 194.

[6] Firmicus Maternus, *De errore prof. rel.*, XXVII.

mutilation undergone by Attis and the Galloi. For, as Frazer remarks, the pine-cone was regarded as a phallic symbol in antiquity, and at the Thesmophoria pine-cones were thrown with pigs and phalloi into the sacred vaults of Demeter to quicken the ground and the wombs of women.[1] It is, perhaps, of importance to note the special prominence of the pine in all these cults, both as an argument against the theory of independent evolution and to confirm the phallic significance of these rites. Dionysos corresponds to Attis, and it is undoubtedly in his cult that the phallic element is especially prominent.[2] At Corinth we find the god venerated in the image of a pine-tree, and the myth told to explain this cult is that Pentheus was hidden in the pine when he was torn to pieces by the female devotees of the god,[3] and the pine-saplings carried by the initiates in the Dionysiac mysteries were called *βάκχοι*, like the god himself and his novices.[4] The phallophoria are also found in connection with the other pine-god Osiris,[5] and we may therefore regard these two elements as related to each other. On the other hand, the myrrh-tree as mother of Adonis, the birth of the god from a tree,[6] the grove of cedar-trees dedicated to Ishtar,[7] Tamuz born from Ishtar under a cedar-tree,[8] all point to a maternal symbolism attaching to the tree in the same area. *Our dying gods are associated with trees in a double sense: they are tree-born, the tree is a mother-symbol,*[9] *and they are phallic trees themselves.*[10]

On the other hand, we find a permanent connection between puberty rites and the trees of the forest which manifests itself in various forms. The real reason of this connection is not quite evident: perhaps it is to be sought for in the fact that these rites are dramatic rehearsals of events that took place in a period of human evolution in which our pre-human ancestors were more arboreal in their habits than even the most primitive of modern savages. The Yuin initiation ceremonies

[1] Scholiast on Lucian, *Dial. Meretr.*, II, I, p. 276, ed. Rabe, quoted by Frazer, *Adonis*, p. 232.

[2] *Athen*, 10, p. 445; 14, pp. 621, 622. *Herodotus*, II, 49. Aristophanes, *Acharnae*, 261. Pollux, *Onomasticon*, IV, 106. Identical with, or as the father of, Priapos. F. A. Voigt, *Dionysos*. Roscher's *Lexikon*, I, pp. 1062, 1063.

[3] Pausanias, II, pp. 2, 6, 7.

[4] Schol ad Aristoph., *Equit.*, 408. Gruppe, *Griechische Mythologie*, p. 781. Hepding, *l.c.*, p. 152.

[5] Frazer, *Adonis*, pp. 340, 343.

[6] Servius ad Virgil, *Bucol*, X, 18.

[7] *Cf.* P. Jensen, *Das Gilgamesh Epos in der Welt-Literatur*, 1906, pp. 12, 13.

[8] Langdon, *Sumerian and Babylonian Psalms*, p. 333. Zimmern, "Der babylonische Gott Tamuz," *Abhandlungen der phil. hist. der Kgl. Sachs. Ges. d. Wiss.*, XXVII, p. 727. Jeremias, *Tamuz*. Roscher's 70 *Lieferung*, 1915, p. 58.

[9] *Cf.* Róheim, "Primitive Man and Environment," *Intern. Journ. Psycho-anal.*, II, p. 173.

[10] Ningiszida (Tamuz) is the "Lord of the Tree standing erect," "The Tree of Life," Meissner, "Babylonische Bestandteile in modernen Sagen," *A.R.W.*, 1902, V, p. 230. *Cf.* the Dionysos Orthos and the phallic processions. Gruppe, *Griechische Mythologie und Religionsgeschichte*, 1906, II, p. 1422.

are called "Kuringal," which means "of the bush" or "belonging to the bush."[1] The Liberian name for the Poro and Sandeh (secret societies evolved out of initiation rites) is "bush" or "devil-bush."[2] The novices of the Simo, Belli, Nessoe (Sandi) Purra pass their period of initiation in the forest; the Akish are called wood-devils,[3] and the Mungi chiefs in the shape of wild animals issue their commands from the forest.[4]

"In some of these rites the tree, or its descendant the pole, is the prominent feature, the centre of the whole scene, to which all the initiates are united by a common bond of sympathy; in others, we find each initiate represented by, or magically identified with, one special tree."[5]

The branch, called "lupanda," plays a prominent part in the initiation ceremony of the Makua and Makonde, and hence the same word is used to designate the whole ritual.[6]

In the Akikuyu ritual a tree becomes the centre of the ceremony. The boys hurl long staves at it, beat the trunk, and are dragged away by the older men.[7] The pole as central element of the ceremony is well known in Australia and certainly connected with the tree.

One feature of the initiation ritual was that the men who were about to undergo the rite of subincision embraced the Nurtunja for about ten minutes.[8]

Possibly the Kananal pole, made of a young gum-tree, is to be regarded as emblematic of some great ancestor of the tribe who was associated with the origin of various totems, so that it is an object, and most naturally the most sacred one which they possess, which is common to all the totems.[9]

When the Ltata, a ceremony to excite sexual desire in the women, is performed at initiation, we find a young tree planted in the middle of the ceremonial ground.

[1] A. W. Howitt, *Native Tribes of S.E. Australia*, 1904, p. 518.

[2] Westermann, *Die Kpelle*, 1921, p. 509.

[3] The same word is used for the bull-roarer in Germany. J. D. E. Schmeltz, "Das Schwirrholz," *Verh. d. Vereins für naturv. u. Unterhaltung zu Hamburg*. IX. 1896. p. 92. Haddon, *The Study of Man*. 1908. p. 285.

[4] L. Frobenius, "Die Masken und Geheimbünde Afrikas," *Nova Acta der Kaiserl. Leop. Carol Deutschen Akademie der Naturforscher*. LXXIV, Nr. 1, 1898, p. 163.

[5] *Cf.* Frobenius, *Und Afrika Sprach*, 1913, III. p. 140. Howitt, *Native Tribes*, p. 581. Roscoe in *Journ. Anthrop. Inst.*, 1909, p. 186. R. E. Dennett, *Nigerian Studies*, 1910, p. 28. H. Junod, *Life of a South African Tribe*, 1913, I, p. 77. Tessmann, *Die Pangwe*, 1913, II. p. 63. Henry, *Les Bambara*, 1910, p. 185.

[6] K. Weule, *Wissenschaftliche Ergebnisse meiner ethnographischen Forschungsreise in den Sudsee Deutsch Ost-Afrikas*, 1908, p. 109. *Cf.* J. E. Harrison, *Themis*, 1912, p. 505. "Korythalia = Youth-Bloom."

[7] Routledge, *With a Prehistoric People*, 1910, p. 159.

[8] Spencer and Gillen, *Native Tribes*, p. 255.

[9] Spencer and Gillen, *Native Tribes*, pp. 364, 630. It is tempting to allude to the sacred tree representing Attis (the Father) and bespattered with the blood of the devotees. Hepding, *l.c.*, p. 158. *Adonis*, p. 223.

and the man who climbs up this tree is the same one who blows the trumpet to excite the sexual craving of the women.[1] There is some reason to believe that both these trees and poles and the bull-roarer are connected with ideas respecting the fertilizing power in males. Strehlow, who calls the kauau "tingara," relates how the novices run round the pole, how they climb to the top,[2] and throw the namatuna (small bull-roarers used in love-magic) from the top of the pole where they have been hanging. At this phase of the ceremony the women are told to make haste and come as soon as they see the high pole, because the "tingara" has caught hold of their future husbands.[3] Here we find bull-roarers hanging on trees in actual ritual: in Wongaibon and Wiradjuri myths the abode of Baiamai is surrounded by wonderful trees, and hanging from the branches are bull-roarers which are always sounding.[4]

Dhuramulan, the one-legged bull-roarer, being of the South Eastern tribes, is also called Ngullagelung, from *ngulla*, "tree," because he lives in trees.[5] The similarity between this bull-roarer and tree-spirit[6] and the flute and tree-spirits of Asia Minor (Adonis Attis Tamuz) and Brazil (Milomaki, Yurupari) seems to me an additional argument in favour of a view which would derive the *dying heroes of the Orient from the puberty ceremonies of savage tribes. In the person of the single dying god and his relations to the mother goddess we have a condensed representation of the many initiates, mourned for and welcomed back again by their many mothers.*

The magical bond of sympathy which unites the novice to a tree[7] is the same mother-fiction which is responsible for the effeminate bearing of the Galloi and similar fraternities. *The dying Gods of Asia Minor must therefore be regarded as developed out of beings like the Daramulun of the Wiradjuri or the Milomaki of the Kobéua.*

Besides being tree-spirits, Adonis, Attis, etc., are also *corn-gods.* It remains for us to show the connection between corn-magic, sexual-rites and initiation. The Hausa corn festival was connected with a ceremonial washing of children.[8]

[1] Strehlow, *Aranda und Loritjastamme*, IV, 1, 1913, p. 14.

[2] Dreams of climbing are frequently caused by the sensation of erection. As for the meaning of the may-pole, *see* Buschan, "Phallus-Kultus," in Moll, *Handbuch der Sexualwissenschaften*, 1912, p. 290; or for the phallic meaning and prominence of the tree in puberty customs, *see* Ploss-Renz, *Das Kind*, 1912, II, pp. 174, 179, 771, 784. Women circumambulate the *Ficus religiosa* to obtain offspring (W. Crooke, "Nudity in India in Custom and Ritual," *Journ. Roy. Anthrop. Inst.*, 1919, XLIX, p. 246).

[3] Strehlow, *l.c.*, pp. 40, 41, 60.

[4] R. H. Mathews, *Ethnological Notes on the Aboriginal Tribes of New South Wales and Victoria*, 1905, p. 141.

[5] R. H. Mathews, *l.c.*, pp. 141–3.

[6] *Cf.* The Anula word for bull-roarer (mura-mura) and the mura-mura or ancestral spirits of the Dieri. P. W. Schmidt, "Die Stellung der Aranda," *Z.f.E.*, 1908, pp. 892, 901.

[7] *Cf.* J. G. Frazer, "The Origin of Circumcision," *The Independent Review*, 1904, p. 204. Idem, *Totemism and Exogamy*, 1910, IV, p. 180. Róheim, *Das Selbst, Imago*, 1921, p. 498. *Idem*, "Primitive Man and Environment," *Journ. Psycho-anal.*, II, p. 173.

[8] A. J. N. Tremearne, *The Ban of the Bori*, 1914, pp. 110, 111.

The Garabawa of Katsina hold a wrestling contest on the same occasion near to a pole erected in the village which seems to symbolize the prowess of the youths. So long as it stands they will be strong, but if it falls down no other will be erected until the youth have grown up and another generation taken their place.[1] Among the Namdji the newly circumcised boys had to stop in the bush for a year. This year commenced with the rainy period: the boys had to make a clearing, sow the seed, and when they had brought the harvest in they were permitted to return to the rest of the tribe.[2]

The festival of Passover, originally a vernal initiation ceremony,[3] was combined with the first-fruit sacrifice of Massot.[4]

Puberty is the period in human life when man acquires the power to propagate his kind.[5] hence also, in a symbolical projection to nature, the power "to sow the seed of future harvest."[6] According to the Nuba, the clan will die out if people "spoil" the durra harvest by untimely coitus, for the old men will not be able to be reborn.[7] The reason for this taboo was given by a Nuba to Frobenius. "A man may not have intercourse with his wife when she is enceinte."[8] The earth is the woman, the corn the child in her womb. After the sorghum-harvest the period of sexual liberty commences and the circumcision festivals are held.[9] The Dakka put the foreskins of the initiates into a hole as sacrifice to the earth, while the Durru hide them in mountain caves with the bull-roarers,[10] which forcibly reminds us of the Galloi dashing their genital organs against the image of the mother-goddess and of the blood with which they bespattered her sacred pine-tree.[11] As in the case

[1] Tremearne, *l.c.*, pp 195, 196. The rite is put in the true light by Tremearne's remark: "This is almost certainly a phallic rite. Even to-day a person wishing to insult another will touch a pole and say, 'Your father.'" *Cf.* Tremearne, *Hausa Superstitions and Customs*, 1913, pp. 496, 511. H. R. Palmer, "Note on Traces of Totemism and some other Customs in Hausaland," *Man*, 1910, p. 75.

[2] L. Frobenius, *Und Afrika Sprach*, 1913, III. *Cf.* Roscoe, in *Journ. Roy. Anthrop. Inst.*, 1909, p. 185. Dennett, *l.c.* Weule, *l.c.*, p. 108.

[3] Róheim, "The Passage of the Red Sea," *Man*, 1923, p. 71. *Idem*, "Passover and Initiation," *ibid.*, p. 111.

[4] *Cf.* W. Nowack, *Lehrbuch der hebräischen Archäologie*, 1894, II, p. 146.

[5] For this aspect of puberty ceremonies, *cf.* J. G. Frazer, "On some ceremonies of the Central Australian Tribes," Australian Association for the Advancement of Science, *Proceedings* of Section H, 1901, p. 319.

[6] *Cf. Atharva-Veda*, Book XIV, Hymn 3, Stanza 14. R. T. Griffith, *Hymns of the Atharva-Veda*, II, 1896, p. 174.

[7] L. Frobenius, *l.c.*, III, p. 112.

[8] L. Frobenius, *l.c.*, III, p. 114: "If a woman is with child at this time the corn cannot ripen." *Ibid.*, p. 132 (Dakka).

[9] L. Frobenius, *l.c.*, III, p. 132.

[10] L. Frobenius, *l.c.*, III, p. 139.

[11] Frazer, *Adonis*, pp. 223, 224. The "Mother-Goddess" was specially reverenced in caves. Hepding, *l.c.*, pp. 124, 194.

of the Dakka, "the burial of the severed parts was intended to fertilize the ground."[1]

Another area in which we find this close association between initiation-rites and food plants covers North Australia, the Torres Straits Islands, and certain Melanesian tribes of New Guinea. The Kakadu hold their "kulori" ceremony in connection with initiation. The "kulori" is a special kind of yam which is regarded as "hot," as it requires special treatment before it can be eaten.

After a yam communion the novices are called "kulori" men.[2] A similar ceremony performed at initiation among the Melville Islanders throws some light on the meaning of this ritual. While the skinning of the yams was in progress the men sang time after time "Yams, you are our fathers." As a result of the performance of this ceremony all kinds of yams would grow plentifully.[3] A secondary reason for the association of the yam ceremony with initiation seems to lie in the fact that these yams are covered with little roots which look like very strong hairs. These roots are called "itjimma," the same being applied to the hairs on the arms and legs.[4] At a certain phase of the ceremony each boy had his head put into a bark "pitchi" with a few yams, and in this position he was held under the water for about half a minute. As the yams had "whiskers," their close associations with the heads of the boys was supposed to be efficacious in stimulating the growth of the hair on the faces of the latter. We here have tangible evidence for the projection of purely anthropic concepts into nature. The boys would have to fight and kill their fathers in the primal horde before they could have access to the women and thus multiply their own species.[5] As the yam's whiskers are substituted for the whiskers of the boys, the multiplication of the plant is substituted for human multiplication, and eating the yams is substituted for eating the old males, the "fathers" killed in the battle. The same connection between puberty and yams is found at Iasa in Kiwai. There are two phases of the initiation ceremony. The first is showing the bull-roarer, which ensures a good crop of yams, sweet potatoes, and bananas. At the second ceremony, called "moguru," the "orara," the wooden image of a nude woman, is shown to them, and they are told that this ensures a good supply of sago.[6] The bull-roarer is called "the mother of yams."[7] According to Landtmann there are two main elements in the moguru initiation ceremony: one of

[1] Frazer, *Adonis*, p. 237. *Cf. also* Frobenius, *l.c.*, III, pp. 135, 172, 211, 272.

[2] B. Spencer, *Native Tribes of the Northern Territory of Australia*, 1914, p. 147.

[3] B. Spencer, *l.c.*, pp. 102, 103.

[4] B. Spencer, *l.c.*, pp. 92, 93.

[5] We here accept the view of human origins taken by Darwin, Atkinson, and Freud. *Cf.* J. J. Atkinson, *Primal Law*, 1903. S. Freud, *Totem and Taboo*, 1919.

[6] A. C. Haddon, *Cambridge Expedition to Torres Straits*, V, p. 218.

[7] J. Chalmers, *Journ. Anthrop. Inst.*, 1903, XXXIII, pp. 113, 116, 118.

these refers mainly to fighting and the other contains certain sexual excesses to ensure the productivity of food plants.[1]

The girl's initiation ceremony at the Hood Peninsula is performed with the intention of bringing luck to the plantations; like the Oriental festivities of Adonis and similar gods, "it may be regarded as a special local development of one dis-associated phase of an initiation ceremony."[2]

We believe, therefore, we have shown that the cult of the "young god" was developed out of the ritual of initiation. Beyond this we shall not go at present, and we shall only try to indicate a solution for one of the questions that can be asked in this connection.

On a level below that of agriculture we are acquainted with ceremonies which aim at increasing the food supply and are closely connected with initiation.[3] These are the *intichiuma ceremonies* of Central Australia. In *Australian Totemism*, I have tried to show that these ceremonies are survivals of a pre-human pairing-season.[4] The "magical" actions performed are symbolical, *i.e.* unconscious imitations of coitus, and the fixation of a certain period of the year for the performance of these rites the rudiment of the original pairing-season.

In a brilliant book on Greek religion (*Themis*, 1912), Miss Harrison has shown the importance of the idea of the "*Eniautos daimon*," the periodical reappearance of the divinity at spring, which was also the new year. She also gives abundant reason for assuming that the "*Eniautos daimon*" *was originally a phallos. Hence it seems obvious to go one step further and explain the periodic reappearance of the demon by the original periodicity of the sexual impulse*, rather than the periodicity of food-supplies.[5]

In a totemic society, the multiplication of the totem-animal is substituted for that of the human species; in an agrarian community we find corn or flowers sprouting from the body of the dead god. We shall therefore assume that originally *intichiuma rites* were performed in Asia Minor, Arabia, Hellas, etc., *as a special phase of the puberty ceremonies, and that it was from this prototype that the cult of the young god and the agrarian ritual were developed.* There are two explanations for the association of these intichiuma rites with initiation ceremonies. One would be

[1] Landtmann, "Papuan Magic in the Building of Houses," *Acta Aboensis, Humaniora*, I, Abo, 1920. *Idem*, "The Folk Tales of the Kiwai Papuans," *Acta Soc. Sci. Fennicæ*, 1917, pp. 339, 344. Idem, *The Kiwai Papuans of British New Guinea*, 1927, p. 350. W. N. Beaver, *Unexplored New Guinea*, 1920, pp. 185–7. ("Jus primæ noctis," like Banaro.)

[2] Haddon, *Migrations*, 11. *Cf.* Haddon, "Head-Hunters," *Journ. Anthrop. Inst.*, XXVIII (1901), p. 217. *Cf.* C. G. Seligman, *The Melanesians of British New Guinea*, 1910.

[3] For a description of these ceremonies, *see* the well-known works of Spencer and Gillen, Strehlow, etc.

[4] For the pairing-season, *see* Westermarck, *History of Human Marriage*, 1908, p. 25.

[5] Cf. *Themis*, p. xii. (Surely the *desire* for food cannot have been periodic, like the sexual instinct.)



VIEW OF THE SMALL HILL WHERE THE ROCK-PAINTINGS OCCUR.

DISCOVERY OF ROCK-PAINTINGS NEAR KONDOA IRANGI.



A TYPICAL ROCK, ON WHICH THE SUBJECT OF TEXT-FIG. 2 WAS FOUND. (A BOY IS STANDING IN SHADOW BENEATH THE ROCK.)

DISCOVERY OF ROCK-PAINTINGS NEAR KONDOA IRANGI.

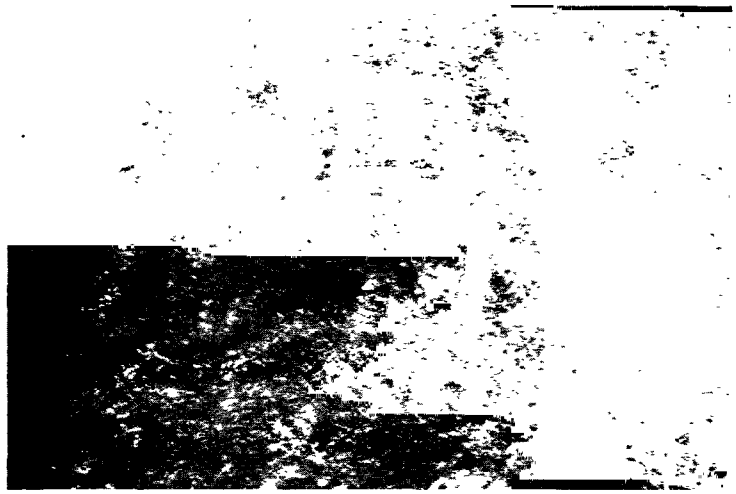


FIG. 1.—MAN DRIVING (?) ELEPHANT. (SEE TEXT-FIG. 1.)



FIG. 2.—GIRAFFES. (SEE TEXT-FIG. 2.)

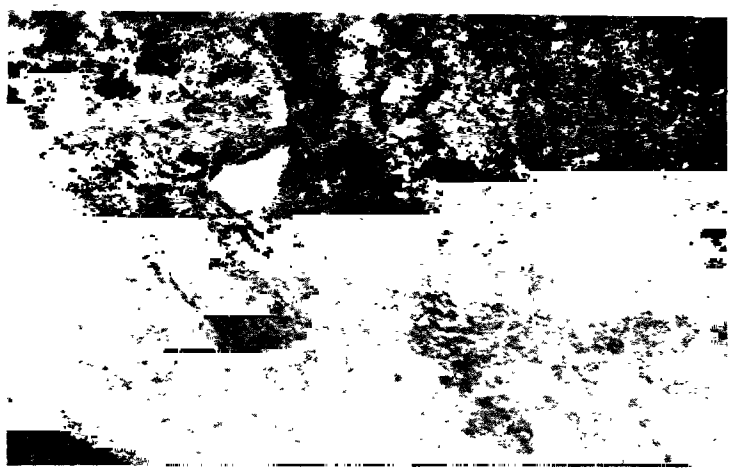


FIG. 3.—FIGURE OF QUADRUPED. (SEE TEXT-FIG. 7.)

that, if we grant the original sexual character of these rites, their association with puberty ceremonies becomes self-evident;[1] and the other, that if Reik is right in explaining puberty ceremonies as repetitions of the struggles in the primal horde between the Old Male and his sons.[2] these battles for the women can obviously only have been fought out in the pairing-season. On the other hand, there seems to be more than the accidental connection between agriculture and intichiuma rites which has been pointed out by Frazer.[3] For as we show in another paper, *the god regularly dies to ensure the food supply of the agriculturist, just as the totem-animal must be killed, eaten, and then multiplied.*

In this close and periodic connection between coitus (multiplication) and death, we see the survival of a pre-human pairing-season when the life of a Cyclopean horde was dominated by the recurrence of battles between the males of the horde for the possession of the females. This explains why the *marriage of the god* is so often *connected with his death*, and why he is often *born of incest*, for before the primal horde came into contact with others of its species this must have been the only possible type of sexual union.[4]

[1] This is the point of view of Ploss-Renz, *Das Kind*, 1912, Vol. II. *Cf.* J. E. Harrison, *Themis*, 1912, p. 423, "The Kouroi and Fertility."

[2] Th. Reik. "Die Pubertätsriten der Wilden." *Probleme der Religionspsychologie*. 1919. The solution proposed for the connection of initiation and the new year by J. E. Harrison, *Themis*, 1912, p. 248, is only partly correct, in so far as the ceremonial regicide is a repetition of the sexual battles fought out in the primal horde.

[3] J. G. Frazer, *Totemism and Exogamy*, 1910. I, p. 217; IV, p. 19.

[4] *Cf.* Freud, *Totem and Taboo*, 1919.

NOTE ON THE DISCOVERY OF SOME ROCK-PAINTINGS NEAR KONDOA IRANGI IN TANGANYIKA TERRITORY.

[With Plates XIX–XXI.]

By T. A. M. Nash, B.Sc., F.E.S.

(*Tsetse Entomologist, Game Preservation Department.*)

While exploring an area of very dense bush in the neighbourhood of Kondoa Irangi last November, I came upon a clearing surrounding a small, rocky, and very steep hill whose sides bristled with enormous slabs of projecting gneiss (Pls. XIX and XX). These outcrops stand at an angle of about 45° with the substratum, and, owing to the great height of the projecting rock, form shelves at their base which, as they face N.W. and the prevailing wind is S.E., can never receive any rain. This place, with its natural shelters, struck me as eminently suitable for rock-paintings, and I asked my boys whether any existed there. They said there were none, but that some miles away at a place called Simbo there were some, but of these I had already heard. The hill being very steep, and the spot a long way from the nearest native "shamba," or from any recognized bush-path, I thought it probable that none of them had ever troubled to explore the hill-side, and I accordingly decided to investigate the matter for myself. After scrambling about for ten minutes I found my first drawings, and before long had found quite a number. Most of them are in rather a bad state of preservation, and in many of the places where they have kept in the best condition they are spoilt by the jumble and chaos of drawing superimposed upon drawing. The pigment used in every case is red, sometimes of rather an orange colour and sometimes purplish. Some of the drawings are outlines only, and others have been filled in with pigment. Most of the work is very crude and unfinished, yet in places very skilful, especially where animals have been depicted, and that the artists were close observers of nature is shown by the perfect stance and curves which they gave, in particular, to the giraffes.

The following are descriptions of some of the better paintings :—

(1) An elephant, with what would appear to be a man driving it with a stick from behind. Since the figure is not actually holding the stick, it may be a presumption to conclude that it is driving the elephant, but the peaceful pose of the man would seem to preclude any idea of his hunting it. The curious hole in the hind part of the elephant's belly is due to the fact that a chip of rock has fallen out from here. This animal would seem to be a cross between the Indian and

African elephant. The dimensions of the picture are: from tip of trunk to back of man, 17¼ inches: height of man 12½ inches. The proportions of the elephant are as near correct as I could draw them, but the human figure should be very slightly more elongated, lack of space preventing my making this correction. The rock-surface curves round, and hence the appearance of the elephant going uphill. Close inspection of the painting is necessary before the outline can be made out, as the colour has faded considerably, but when looked at in detail it will be seen as depicted in Text-fig. 1 and Pl. XXI. Fig. 1.

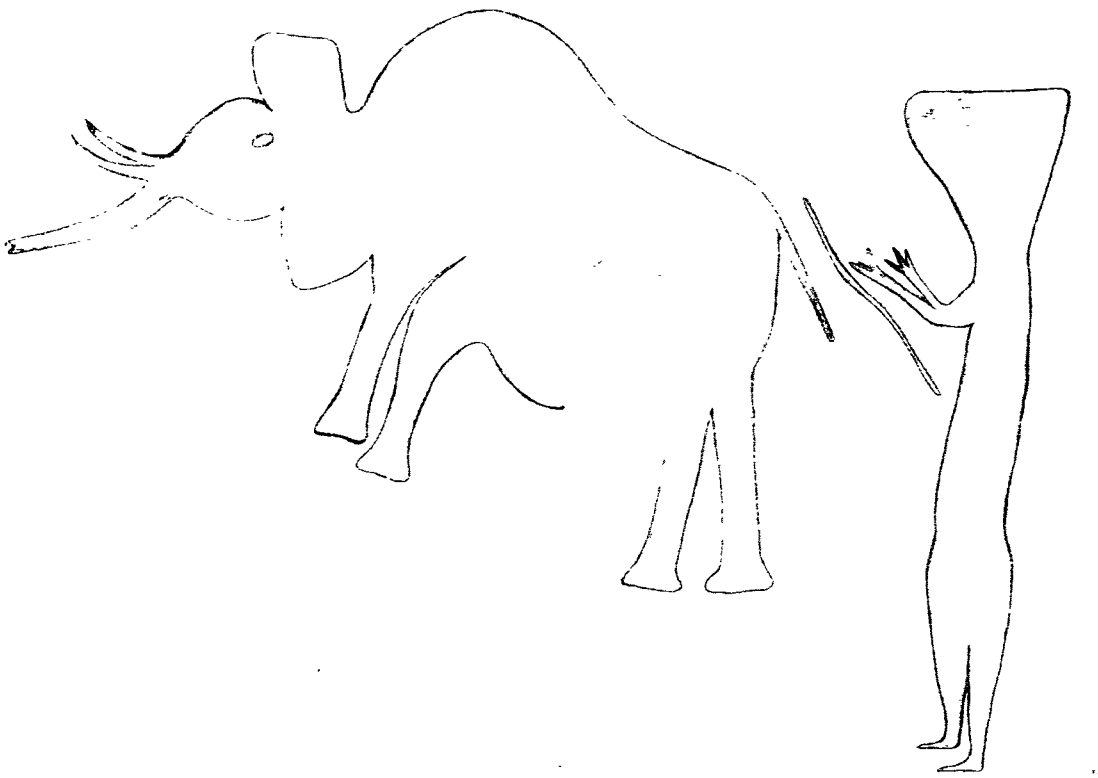


FIG. 1.—MAN DRIVING (?) ELEPHANT (SEE PL. XXI. FIG. 1.)

(2) This painting clearly represents two giraffes, and is by far the best finished of any I found, though unfortunately there are other drawings superimposed. The dimensions are: from mouth to tip of tail, 18½ inches: from hump of back to tip of fore-hoof, 12½ inches. (Text-fig. 2 and Pl. XXI. Fig. 2.)

(3) An incomplete fragment, representing the hind-quarters of a giraffe. (Text-fig. 3.)

(4) This fragment might represent anything, but it gave me the impression of a rhinoceros round whose fore-limb a device comparable to the South American bolas had been flung. I admit this is highly fanciful. (Text-fig. 4.)

(5) I take this to be a schematic drawing of a male human figure. My only reasons are that the arm-like appendage is composed of five lines and that the general shape somewhat recalls a human form. The feet of the original are very hazy, but they appear somewhat as I have drawn them. The head is composed of seven complete concentric circles, followed by eight incomplete ones, which are continued down into the body in the form of two lines. The first of this series of circles is projected into only one median line which runs down into the ♂ genital organ: the second is continued into two lines, running down one on each side of the penis and possibly symbolical of the scrotal sacs. The remaining six of these



FIG. 2.—TWO GIRAFFES. (SEE PL. XXI, FIG. 2.)

incomplete circles send a line down into each leg. In those places in the legs where the lines are clear enough to be counted there would appear to be eight or possibly nine, but where these extra two or three come from I could not make out. One would have liked to have found only five lines running into each leg, but there are certainly more. The length of the figure is 42 inches; width of head, $9\frac{3}{4}$ inches; length of arm, 11 inches. (Text-fig. 5.)

(6) On the left of the figure just described, and somewhat above it, is another rather similar figure: this, however, is in an extremely bad state, and little can be made out, except that it possesses one arm—the left in this case—and that this



FIG. 3.—HIND-QUARTERS OF GIRAFFE.

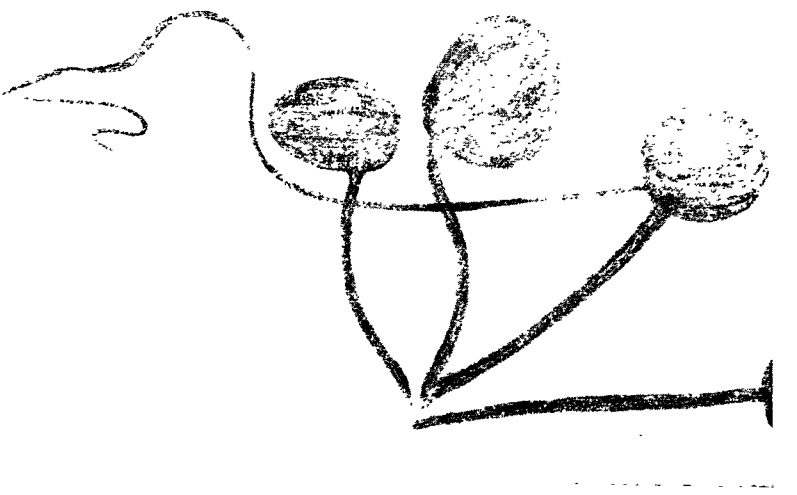


FIG. 4.

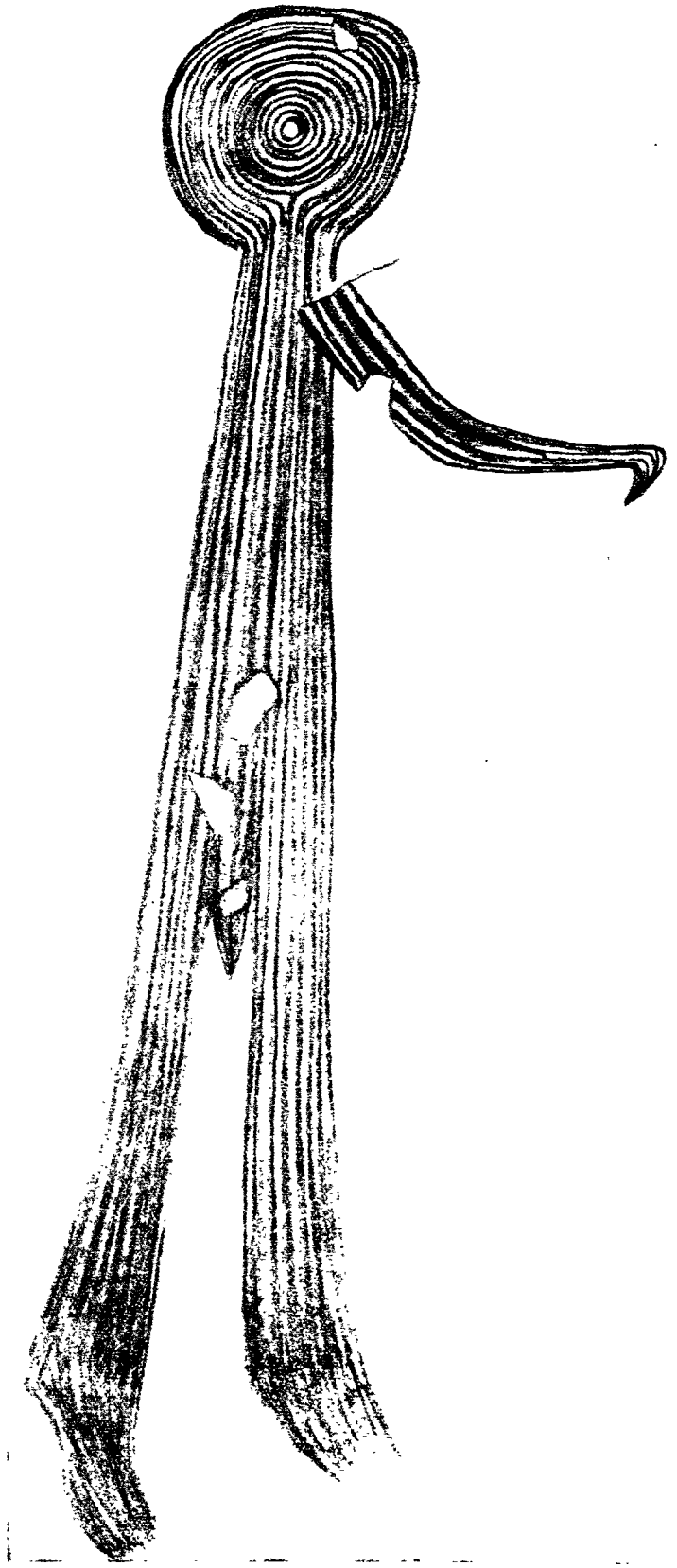


FIG. 5.—SCHEMATIC HUMAN FIGURE (?).

FIG. 7

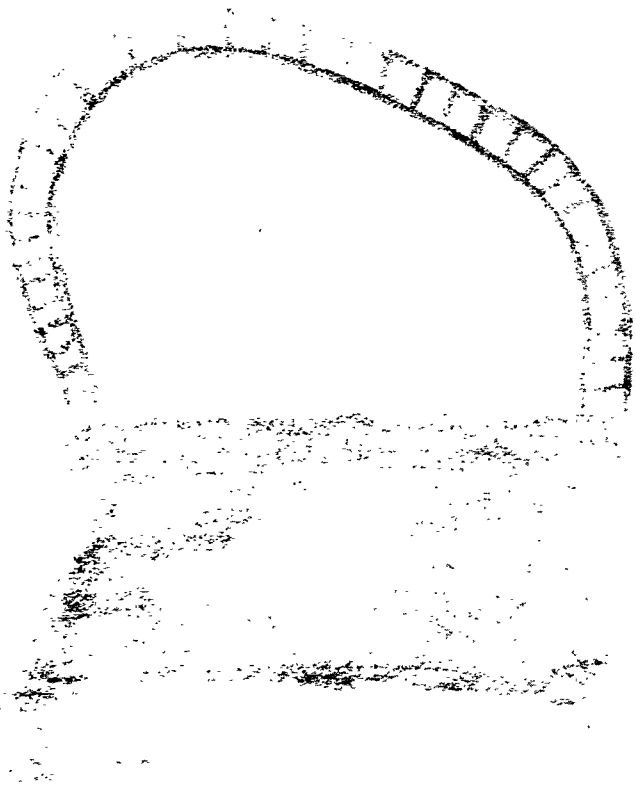


FIG. 9.

FIG. 6.

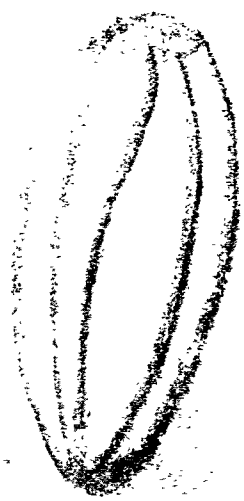


FIG. 10.

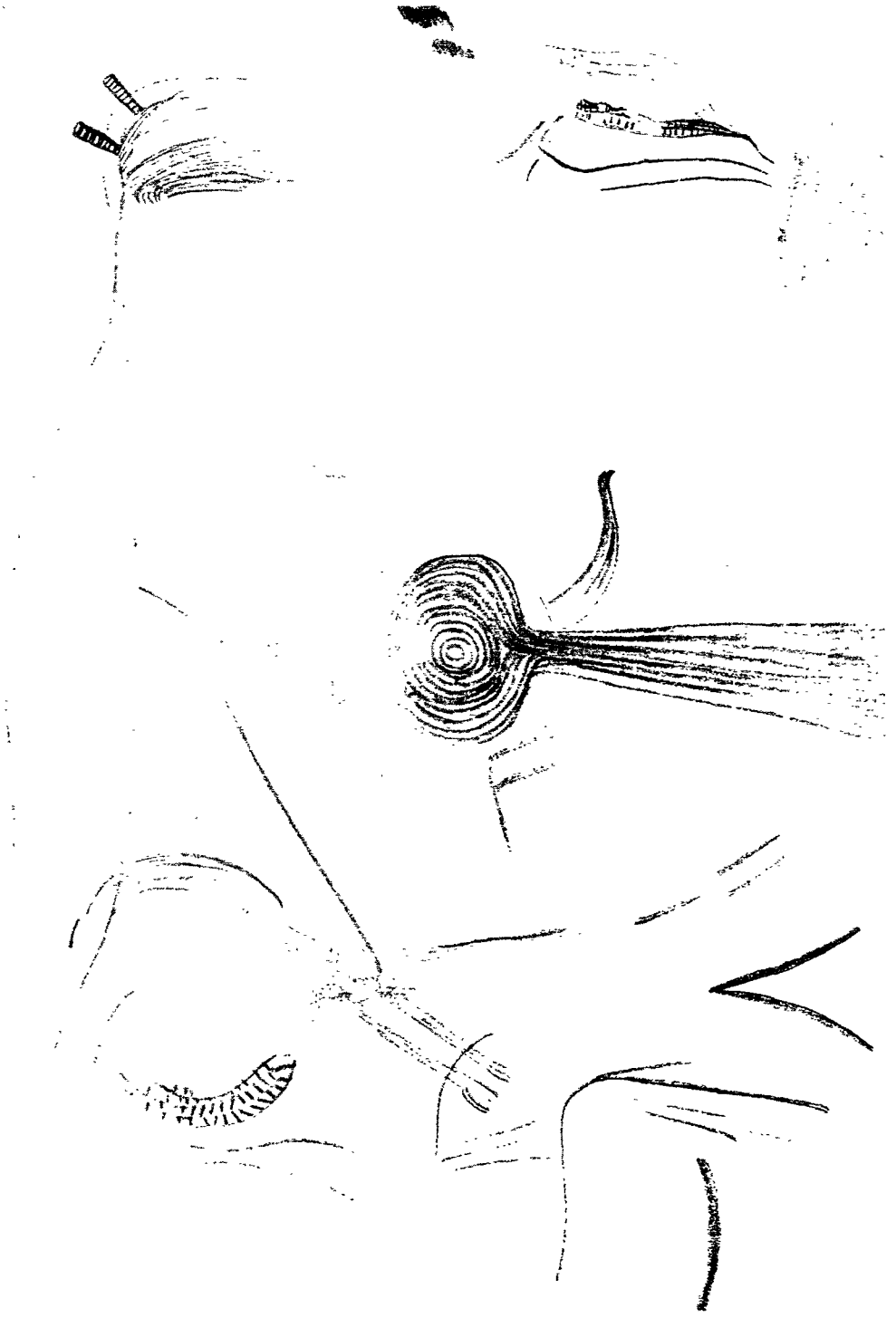


FIG. 8. VARIOUS DRAWINGS ON PART OF THE ROCK; THE SUBJECT OF FIG. 5 IS SEEN IN THE CENTRE

arm, unlike that in (5), is not stretched right out but curves in towards the body. There would appear to be something above the head. (Text-fig. 6.)

(7) The hind-quarters of some animal. (Text-fig. 7 and Pl. XXI. Fig. 3.)

(8) A sketch of part of the rock, to show the number of different drawings, and remnants of drawings, in the vicinity of the schematic man (5). (Text-fig. 8.)

(9) A fairly well-preserved drawing, but what it is supposed to resemble I have no idea. (Text-fig. 9.)

(10) Another mystery drawing. My boy says that it reminds him of the way the native children draw a hand in the sand: they first draw a circle and then draw five lines radiating from it to represent the fingers. However, this would seem an extremely far-fetched explanation of this drawing. (Text-fig. 10.)

In conclusion, I wish to acknowledge the kindness of Mr. Potts, of the Game Preservation Department, for permission to use some of the photographs published in this paper.

PHYSICAL ANTHROPOLOGY IN SUOMI (FINLAND).

[With Plates XXII and XXIII.]

By Y. K. Suominen, M.A., M.L.

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Introduction.

In the following pages it is my intention to give a short survey, chiefly of the latest physical-anthropological research in Finland. It is, of course, impossible to give an exhaustive account in one article, and the research work regarding several points is not yet completed; it would, therefore, hardly even be desirable to attempt to do so for the time being. Much work, however, has been done in Finland of late in this respect, thus throwing new light on several uncertain points. For this reason, I take it, a short survey may prove of interest to readers of this *Journal*, especially as it is difficult to get a clear idea in England of this latest research work, since the results have been published in various journals and, in many cases, in languages which are but little known in England. I shall be glad if the short account which I am going to give awakens interest, so that later on, when our research work advances, we can give more detailed statements by the experts on the subject.

It may be useful to give in this introduction a few facts of the history of Finland, which may have a bearing on the development of the Finnish people as they are to-day. The oldest mention in literature regarding Finns is generally considered to be in the last chapter of "Germania," by *Tacitus*, which describes a race called Fenni (the Latin name of Finland is still Fennia: while the Finns' own name for their native country is Suomi); the description is short and vague, and there are

different opinions whether it, in fact, applies to Finns or to Lapps. *Herodotos* (according to *G. Retzius*) also seems to have had some kind of an idea of the existence of the Finns, whom he includes amongst the Scythians (Σκύθαι), which general name he gives to several different peoples. To us Finns the statement of *Herodotos*, in which he mentions the steam-bath of certain Scythians living in the extreme north, is of special interest. In this steam-bath we may perhaps recognize the original form of our national pride—the Finnish bath-house (*sauna*)—which institution is unknown to our neighbours the Scandinavians, Lapps, and Slavs. There is hardly any historical record of the Finns during the first thousand years A.D. During that time the Finns still consisted of scattered tribes, occupied in fighting among themselves and in looting expeditions deep into the territory of the Scandinavians and Slavs, who returned these visits to Finnish territory. About this time the Finns moved to their present country, either across the Gulf of Finland or round it by land, which previously had a small Lapp population and in the most south-western part a population, probably consisting of some Teutonic tribe, which disappeared and became merged with the Finns (the present Swedes in Finland came much later). To begin with, the Finns only colonized the southern part of Finland and only gradually moved more northward; thus it was not until the 16th century that the Finnish settlement spread to the out-of-the-way places in Central and North Finland (*Sirelius*). Being nearer the Central European centres of civilization, the Swedes became Christians earlier and were united in one state. This enabled them to conquer the scattered Finnish tribes by their crusades during the years 1154–1293. At the same time Swedish settlers moved to the coasts of Finland, where the population has remained Swedish to this day, retaining their Swedish language. From this time until 1809 Finland formed a part of the Kingdom of Sweden, as mentioned shortly by *Medill* (I quote him, as in my opinion, he, being a foreigner, is likely to give just the information which, from the foreign point of view, is necessary to understand essential points): "Thereafter the history of Sweden becomes the history of Finland, and for nearly six centuries these two countries remained united, the Finns electing representatives to the Swedish Parliament, becoming a part of the Empire, and enjoying the same rights and privileges as the Swedish people themselves." The whole of this period consisted of "constant wars with the Russians, who were successfully beaten off by the combined effort of both the Swedes and the Finns," and it was not until 1809 that Russia succeeded in conquering Finland. "Although henceforth under Russian dominance, the Finnish people always enjoyed complete internal autonomy. Finland has, in fact, since 1809 existed as a fully organized state, a constitutional Grand Duchy, with its own laws and institutions administered by Finnish officials . . . The languages of the people remained Finnish and Swedish." In 1917, on December 6th, Finland was declared independent, and made its independence secure by its war in the following year against its arch-enemy, Russia.

As may be seen from this short general survey, the peoples with whom the Finns have come most into contact during the historical period, and with whom there may be a question of racial mixture to any appreciable extent, are the Swedes and, to a lesser degree, the Lapps. One has still to mention the Russians, but their importance has been much smaller. There have never been any Russian settlers in Finland in the ordinary sense, not even near the border-line, as the Finnish population, practically pure, extends far (100 to 200 miles from the frontier) outside the political frontiers of Finland both in the east and the south (the sole exception being St. Petersburg, which only goes back 200 years, and is on all sides surrounded by the Finnish Protestant population of Inkeri (Ingermanland)). Other foreign nationalities have played even a smaller part. Finland naturally took an active part in all Sweden's foreign wars, and, regarding this point, *G. Retzius* (a Swede) says: ". . . wars in which the Finns belonged, usually, to the *élite* troops of the Swedish army; at the same time the Russians attacked Finland, looting and burning, but were fought back by the brave peasantry of Finland." During these wars Finnish soldiers had to pass several years, even several decades, abroad, where many of them got married, thus admixing foreign blood to their people. Moreover, in the larger cities there have been for some time small German and Jewish colonies, and also, mainly in the eastern part, a number of roving gipsies. The area of the Republic of Finland, which lies between 60°–70° latitude, is about 700 miles in length and 400 miles at its widest. The present population is about 3½ millions. About 200 years ago the population was just under 600,000, but dropped, as a result of the great war at that time, down to 300,000; it has thus multiplied itself during 200 years approximately ten times. Considering its size, the country is still very sparsely populated, only about 25 persons per square mile. Of the 3½ millions, about nine-tenths are Finnish-speaking and one-tenth Swedish-speaking. The number of other nationalities is very small: about 5,000 Russians, mostly near the eastern frontier; about 2,000 Lapps in the extreme north; and of other nationalities even fewer. As mentioned above, there are a great number (several hundred thousand) of Finns living on the Russian side of the frontier, also a considerable number in Northern Sweden (previously also a great number in Central Sweden) and in Northern Norway, about half a million in the U.S.A., and also smaller numbers in other countries (*e.g.* Canada). The Swedish element in Finland may be considered Swedish more on account of their language than of their racial features (I will revert to this in full later on). Racial boundary does not tally with the linguistic frontiers. Besides Swedes who have become Finnish, there probably are even more Finns, who, owing to historical circumstances, have adopted the Swedish language. It is quite natural that, during the Swedish rule, Finns who had been to school or otherwise risen to a prominent position often adopted the official language of the united country. This may be seen from the family names of numerous Swedish-speaking people in Finland, which are not really Swedish

but merely misspelt Finnish words. Further, it may be noticed regarding family names that in the olden times, when those who had family names were in the minority, it often happened that a family name was given either by a schoolmaster or an army officer to their subordinates, and in most cases the name given, of course, was Swedish. There are a great number of people in Finland who have thus obtained a Swedish name without having Swedish ancestors.

ANTHROPOLOGICAL RESEARCH REGARDING FINLAND.

Carl Linnæus ("Fauna Suecica"), whilst dealing with the inhabitants of the Kingdom of Sweden, gives the following definition of Finns (it may be worth mentioning that *Linnæus* through his journeys came into contact chiefly with the most northern Finns, *i.e.* living near the Lapp frontier): "*Fennones* corpore toroso, capillis flavis prolixis, oculorum iridibus fuscis." Later investigation has proved that the report by *Linnæus* on the colour of the eyes of the Finns is erroneous. In the edition, published in 1800 by *A. Retzius*, of Linnæus' "Fauna Suecica" it is mentioned: "Fennones forte Slavis Tatarisque originem debent." *A. Retzius* had arrived at this result on account of his investigations of six Finnish skulls, giving most attention to brachycephaly (cephalic index about 80). He places the Finns in the same group as Slavs, Afghans, Persians, Turks, Basques, Lapps, etc. ("brachycephalæ orthognathæ"). According to the principles of classification of *A. Retzius*, the French also should really belong to the same class: but without sufficiently knowing the anthropological qualities of the French, he thought them to be dolichocephalic, which opinion has been quashed by later investigation.[1] Already during the time of *A. Retzius* there were divergences of opinion regarding the origin of the Finnish race. He writes in his work "Ueber die Schädelformen der Nordbewohner": "There is hardly another European people whose origin and racial relationship is more enveloped in darkness until the most recent times, and regarding whom so many suppositions have arisen, than the race in question. The richness of the language of this people, the beauty of its ancient poetry and its glorious, brave and steady national character all give evidence of great

[1] Brachycephaly is more pronounced and more general in France than in Finland—otherwise a clear proof that dolichocephaly or brachycephaly in themselves do not give a definite proof of the superior mental qualities of a race, as opinion at times has been inclined, even in scientific literature, to be in favour of dolichocephaly amongst dolichocephalic nations (but not amongst the French). *Rud. Virchow* says on this point: "For a time the opinion was prevalent, corresponding to the idea of the primeval race being of Turanic origin, that the primeval race had been short-headed and that short-headedness (brachycephaly) was proof of less-developed brain. Later investigation has proved these ideas to be false. We know now that in Germany, France, and Italy short-headedness is not only widely spread, but also that the brachycephal brain is several times bigger and shows better development than the dolichocephal. Further, we know that a majority of the most ancient skulls are definitely dolichocephal." I mention these things only to prove what a decided influence "race"-feeling and patriotic pride of the researcher can have even on his scientific opinions.

ancestors." Referring to the investigations of *Keyser*, the historian, *A. Retzius* comes to the conclusion "that the present Finns are descendants of the Scythians, who were very numerous and powerful in former days." According to *Keyser*, the primeval inhabitants of Europe were a "Turanic" race of Lapp or Finn tribes. Of the other upholders of this opinion may be mentioned *Arndt*, *Rask*, *Prichard*, and *Nilsson*. A more popular version than the division into human races, given by *A. Retzius* (four races: dolichocephalæ orthognathæ et d. prognathæ, and brachycephalæ orthognathæ et br. prognathæ), has become that of *Blumenbach* (already introduced by *Linnæus*). He distinguishes five different varieties according to the continents, as known: Caucasian, Mongolian, Ethiopian, American, and Malay. The Finns and Lapps he counts among the Mongolian variety. *C. v. Haartman* regards western Finns (Hämäläiset, men of Häme = Tavastland) as original Finns, whereas he places the Karjalaiset (men of Karjala = Karelia) of East Finland as relations of Arabians. *Hueck* does not approve of this theory of *Blumenbach* as regards the race of the Finns, but holds that the peoples of Finnish family are a race of their own: ". . . quæ et a Caucasica et a Mongolica differat." *Hueck* gives a short statement of the various opinions regarding the mutual relationship of the Finns and Lapps and also their relationship to Teutons, Slavs, etc., which opinions have been put forward by *Malte-Brun*, *Pinkerton*, *Burdach*, *Bory de Saint-Vincent*, and *Parrot*. Of the scientists, who came after *Hueck*, the following may be mentioned, in addition to those whose names have been given above:—*Welcker*, *Rud. Virchow*, *de Quatrefages* and *Hamy*, *G. Retzius*, *C. Lovén*, *E. Nordenson*, *R. Tigerstedt*, *G. Heinricius*, *O. Engström*, *K. Hällstén*, *F. W. Westerlund*, *M. Oker-Blom*, *I. Wilskman*, *Y. Kajava*, *M. Schroderus*, *Kai Donner*, *S. E. Wichmann*, *M. Wallenius*, *E. Warén*, *H. R. Malmio*, and *Armas Ruotsalainen*. Moreover, various short and long anthropological treatises have been published during the last few years, among others, by *Väinö Lassila*, *Osv. Streng*, *T. A. Vuorinen*, *Olof Sievers*, *Karl Nickul*, *K. Hildén*, *Hj. Söderström*, *J. F. Blomqvist*, *W. Lojander*, *W. Pipping*, *J. J. Karvonen*, and *Y. K. Suominen*. The most extensive and important investigation has been made by *G. Retzius*, a Swede, and by *K. Hällstén*, *F. W. Westerlund*, *I. Wilskman*, and *Yrjö Kajava*, all Finns. The following is to a great extent based on the articles of the last mentioned. *K. Hällstén* has measured over 100 skulls of Finns, Lapps and some other people of Finnish family.

The work of *G. Retzius*, "Finska Kranier jämte några natur-och literatur-studier inom andra områden af Finsk Antropologi," published in 1878, is probably the best-known work dealing with the anthropology of the Finns. I quote in a condensed form his description of the two chief tribes of Finland: Hämäläiset (Tavastians) living in the western part of the country, and Karjalaiset (Carelians) inhabiting the eastern part:—

Hämäläiset.—"*Structure of body:* strong, solid, broad-shouldered, and generally inclined to be broad, plump, with big-built limbs, of average height, . . .

strong muscular system. *Colour of skin:* fair . . . *Head:* as a rule, big,[1] short, and broad (brachycephalic),[2] but not really high, often fairly angular with highly developed 'tubera parietalia.' *Face:* big, long, but proportionately even more broad, . . . lower chin highly developed . . . *Nose:* small, fairly broad. *Iris:* fair grey-blue, or more often blue-grey, varying to grey or blue-white. *Hair:* fair on the top, straight *Growth of beard:* generally poor."

Karjalaiset.—"*Structure of body:* less strong than that of Hämäläiset, more slim and of better proportions, often of above average height; numerous appearances of individuals of fairly tall height. *Colour of skin:* darker than Tavastians or somewhat sallow. *Head:* . . . proportionate, fairly short (brachycephalic) . . . *Face:* proportionately long, but generally of a proportionally small width . . . *Nose:* long, straight, and of good proportions, sharp . . . *Iris:* darker grey-blue . . . *Hair:* . . . generally chestnut-brown, . . . usually curly, often thick. *Growth of beard:* seems to be fairly poor."

This division into the western group, Hämalaiset, and eastern, Karjalaiset, may be considered the chief division of the Finnish people. The remaining groups (of which *G. Retzius* mentions two: in Central Finland, living between the Hämäläiset and Karjalaiset, are the Savolaiset (men of Savo), and, in north-eastern Finland, Kainulaiset (Kwaenians). In addition to these may be mentioned Varsina-is-suomalaiset (proper Finns) of the south-west, Satakuntalaiset (men of Satakunta) of the most western part, Uusmaalaiset (men of Uusimaa) of the most southern part, and Pohjalaiset (Ostrobothnians) of the shores of the Gulf of Bothnia, all different varieties of these two chief tribes Karjalaiset and Hämäläiset.

Lapps.

Before giving a detailed survey of the characteristics of the Finns, it may not be out of place to give a short mention of the Lapps, on whose relationship with the Finns opinions have often differed. The language of the Lapps is related to the Finnish language, but opinions vary whether they belong racially to the Finnish family of peoples or whether they are of a different race, which has adopted a language related to Finnish, but which in the beginning was foreign to them. The Lapps number in all about 30,000, most of whom (about 20,000) live in Norway, 6,000 in Sweden, 2,000 in Finland, and 2,000 in Russia.

[1] *G. Retzius* divides the Finnish skulls into two groups: (1) strong and sturdy, (2) less strongly built. The skulls belonging to the first group, which seem to be more prevalent, are, according to *Retzius*, "the biggest normal skulls known to anthropology. Especially the bony structure of the face is particularly strongly developed."

[2] Cephalic index, fixed by *Retzius*, shows variations round 80, the biggest group being mesocephalic (76·0 to 80·9).

According to an article by *Kajava* on the Lapps, I give a few of their characteristics: The height of males according to different scientists is 152–161 cm. (the shortest race in Europe), but the measurements obtained during more recent times show an improvement on the earlier ones—probably owing to better living conditions—as is the case with several other peoples; cephalic index, according to various scientists, is between 81 and 87, thus being distinctly brachycephalic; the relative width of the nose is bigger than that of other European peoples; about 50 per cent. have dark eyes, and about 75 per cent. dark, straight hair; the growth of beard and hair generally is poor; the colour of the skin is a little darker than that of the Finns: the lower extremities are relatively the shortest in Europe; the bone structure shows certain protomorphic characteristics.

Itkonen, one of the most prominent authorities on the Lapps, describes the Lapps as follows:—"Head fairly small, round: forehead, low: cheek-bones prominent: lower chin rather weakly developed: eyes small, straight and brown; nose often low but not very wide; hair dark, straight: beard thin and usually of lighter colour than hair: skin white or yellowish: legs comparatively short, often crooked; hands and feet small. While the Lapp thus gives the general appearance of being slight, he is, however, strong and of great endurance. He is especially used to carrying heavy burdens and making long journeys on foot: on account of this, his walk is of a peculiar swaying gait."

Some researchers regard the Lapps as being a pathological race, who degenerated owing to unfavourable surroundings, whereas others regard them as belonging to the Mongolian race. *Stratz* suggests the possibility that they may be the remainder of the joint primeval race of the white and the yellow races. However this may be, I would like to pay particular attention to the fact that, as may be gathered by comparing the above descriptions with each other, the colour of skin, hair, and eyes of the Lapps is thus darker than those of the Finns, and they are shorter in height (difference about 10 cm.): brachycephaly is more strongly prevalent than with the Finns, and their general appearance is described as slight, in direct contrast to the sturdy and strongly built Finn (especially may be noted the mention by *Retzius* that the Finnish skulls are the biggest known to anthropology, and his statement regarding the strong lower chin, which is in direct contrast with that which *Itkonen* says regarding the smallness of head and weak lower chin of the Lapps). It will be useful to bear these facts in mind when continuing in the following the study of the characteristics of the Finns.

Colour of Hair and Eyes of the Finns.

We will investigate first the *colour of hair and eyes of the Finns*. As may be seen from the above, *G. Retzius* states that the iris of Hämäläiset and Karjalaiset is fair, the hair of the former is fair and straight, that of the latter brown and curly. *R. Virchow*, who has travelled extensively in Finland, says on the same subject:

"I am able to summarize my experience as a whole as regards the colour of the Finns as follows:—We have, in fact, not seen any dark Finns at all, none at all I am able to say. Persons having brown eyes were so rare that I have recorded only a few cases, and even these could hardly be called wholly dark. Otherwise there are all shades of blue, often the most light watery blue, from a nearly white blue to the darkest blue; very often grey-blue shades could be seen. Wherever we were, either east or west, we mostly encountered blue eyes and, generally speaking, a fair-coloured skin . . . It can, therefore, be concluded without any doubt that one may investigate any tribe in South Finland—I am not speaking of the coasts but inland districts in South Finland—and all of them are fair. And it certainly is of the greatest importance that we now know that the Finns are fair, and thus are not in any way connected with the brachycephalic, described as dark, in Germany, France, and Italy. There are thus also fair brachycephalics, as the brachycephaly of all the Finnish tribes living in Finland is beyond any doubt." After mentioning that a great number of men of learning consider Finnish peoples as a sub-class of the Mongolian race, whose characteristics are yellowish skin, dark hair, and dark eyes, brachycephalic skull, and slight structure of body, *Virchow* says: "The Finns in the middle parts of the country, where Aryan migration has not extended, are big and strong people with light-blue hair and fair eyes, although they possess typically short heads." According to *Kajava*, 78 per cent. of Finns have fair, blue, or grey eyes, and 57 per cent. fair hair. For comparison it may be mentioned that, according to the new and extensive "Anthropologia Suecica," by *Lundborg-Linders*, the percentage of fair-eyed Swedes (Sweden) is 86·9, mixed-coloured 8·1, and brown-eyed 5·0; according to the same researcher, 6·9 per cent. in Sweden have fair hair, 62·5 per cent. light brown, 25·1 per cent. mid-brown, 2·0 per cent. brown-black, and 0·3 per cent. black; 3·3 per cent. are red-haired. According to *G. Retzius*: "The colour of the eyes in Sweden is 47·4 per cent. blue, 19·3 per cent. grey, 28·8 per cent. mixed (meliert), and 4·5 per cent. brown. The colour of the hair of the Swedes is 2·3 per cent. yellow, 52·0 per cent. ash-grey, 21·6 per cent. brown, 0·8 per cent. black, and 2·3 per cent. red." *F. W. Westerlund* has arrived at the following result by the investigation of 4.650 Finns (male): "Blue eyes and fair hair are prevalent with about 33 per cent. amongst the Swedish-speaking, but slightly less, or about 30 per cent., amongst the Finnish-speaking; amongst the latter, dark persons are slightly more prevalent: in Karjala and North Pohjanmaa (Kainuu) these form 7 to 8 per cent. of the population: in Savo and Häme 5 to 6 per cent. The difference is thus not so great as has been thought up to now. The remainder, *i.e.* the great majority, is made up of a mixed type with which are counted amongst others all those who have grey-brown eyes." In the various parts of Finland there is thus a small difference in this respect: the fair colour somewhat decreases when moving east or northward. To illustrate this I will give a few more percentages according to *Kajava*. Amongst the Swedish-speaking population of South and

South-West Finland there are 50 to 54 per cent. blue-eyed; amongst the Finnish-speaking population of East and North Finland, 40 to 42 per cent.; in other places in Finland the percentage falls between these numbers. Mixed-coloured (meliert) eyes amongst the Swedish population on the coast form 9 to 10 per cent., in East and North Finland 19 to 20 per cent. The greatest number of dark-eyed (9 per cent.) are in North Finland. In West and South-West Finland there are grey-eyed, 35 to 37 per cent., in other places in Finland, 30 to 32 per cent. The greatest number of brown-haired is in East Finland (Karjalaiset, 45 per cent.), and the least in South Finland (30 per cent.).[1] In the figures given above, the classification in the different groups has, in various cases, taken place in accordance with principles which are varying, and for this reason I have quoted them, such as they are, without combinations. An observant reader will, however, notice from them the fact that the Finns are a distinctly fair people, and the difference from the Swedes in this respect is small. In order to explain this fairness, it has been generally thought to have been due to a Teutonic[2] admixture, but, on closer investigation, one sees that this explanation is not sufficient. It is noticeable that the Lapp influence in Finland, especially as regards the eastern and northern parts, is greater than in Sweden (in addition, some Russian and gipsy influence in the eastern parts), which may be quite sufficient to explain the small difference in colour which has been ascertained. (For comparison it may be mentioned that in the northern parts of Sweden, where the Lapp influence is more noticeable, there are 6·4 to 10·1 per cent. brown-eyed, according to *Lundborg-Linders*, while the corresponding figure for North Finland is 9·0 per cent., being thus practically the same.) Paying attention only to the colour of hair and eyes, one could, under the circumstances, hardly come to any other conclusion than that the Finns are a Teutonic people, who have been slightly more mixed with the Lapps than the Swedes, and who have somehow adopted a language strange to Teutons. Taking into consideration other facts, a conclusion of this kind proves to be less probable. *Under the circumstances, the supposition that the Finns are, originally, independent of the Teutons, and of a fair race, seems more probable.* To throw additional light on this, a few more points may be mentioned. Knowing how comparatively great the Finnish mixture is in Sweden, one would expect, if the Finns

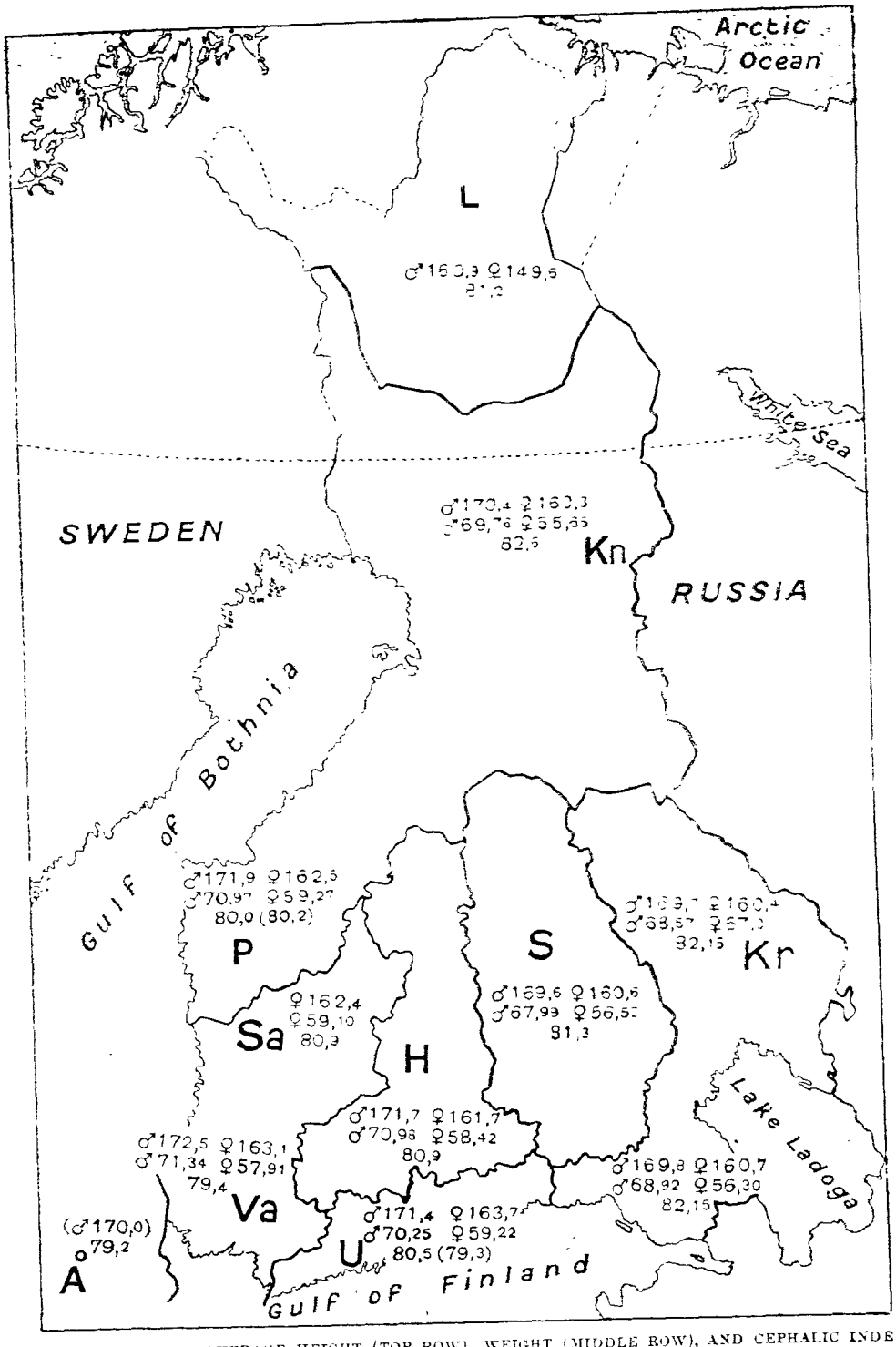
[1] I have myself been lately investigating the colour of hair amongst the Hamalaiset: the work is not yet completed. Generally the hair is fair, but there are also cases of dark hair. So far I have not met amongst my specimens a single person with entirely black hair. Regarding eyes, I noticed from my investigations of peasant settlements on the oldest districts of Hame, that I did not meet a single person with distinctly brown eyes amongst the persons whose parents had not moved to the district from other places: nearly all had light-blue eyes, the remainder had green, mixed-coloured, etc. These my own observations include only a comparatively small number of people, a few hundreds only, but from a district of Hame where the Teutonic influence is smallest.

[2] Because many conclusions regarding the earliest history of the Finns are based upon linguistic researches, I use here the word "Teutonic," although "Teutonic" means rather the language than the race.

were an originally dark-haired and dark-eyed race, that the Swedes would be noticeably dark as compared with the Norwegians, whose mixture with the Finns is small. This, however, is not the case. A point throwing more light in this respect is the anthropological research work of our nearest relatives the *Estonians*, who live on the southern shores of the Gulf of Finland. *Virchow* says of the Estonians: "fair-coloured, and not seldom quite fair, and blue-eyed." *R. Willems* published in 1925 his research work regarding them: as far as I know it has not been printed. For this reason I avail myself of *Kajava*'s, as well as the author's, own review on this work. According to *Willems*, the colour of the iris of Estonians is blue, 24·6 per cent.: grey, 51·1 per cent.: inclined to be green, 10·7 per cent.: brown, 13·0 per cent.: or in two groups: fair, 79·13 per cent.: dark, 20·87 per cent. The colour of hair is fair, 55·80 per cent.: brown 42·71 per cent.: red, 0·64 per cent.: black 0·85 per cent. "Black, straight hair is not more prevalent than in Sweden." Thus, about 79 per cent. have fair eyes, and about 56 per cent. fair hair, while the corresponding figures of the Finns were 78 and 57 per cent.—practically the same. The Scandinavian influence is much smaller in Estonia although there is some, than in Finland, so that it is impossible to account for this fairness by Scandinavian influence. The Lapp influence is practically negligible in Estonia. The people with whom the Estonians have been in contact to a greater degree than the Finns such as the Germans, Russians, etc., are darker than the Estonians. One who knows the local conditions can easily see that the connection with the Germans and Russians has not been so close as it is often thought abroad. My opinion is that these observations on Estonians support the theory that the fairness of the Baltic Finns is a characteristic which originally belonged to this race, and not merely a result of Scandinavian admixture, as is usually presumed.

Height.

F. W. Westerlund investigated about 130 000 males of conscript age (21 years) and obtained the average height for Swedes in Finland, 1,684·2 mm., and for the Finns 1,667·8 mm. (years 1885–92). For comparison it may be mentioned that *G. Retzius* obtained an average height of Swedish (in Sweden) conscripts of 1 708·8 mm. (years 1897–8). *Lundborg-Linders* reached a new average height for Swedes (in Sweden), of the ages of 21 and 22, of 1,722 mm., thus a small rise may be seen: the same fact has been noticed in several civilized countries, as a result of improved conditions. The material of *Willems* contains chiefly Estonians of the ages 20 to 22: he has reached an average height on the Estonian mainland of 1,721 mm., and on the islands of 1,737 mm. All these figures are, however, too small to prove the average height of a fully grown man, because in all these countries the growth of height continues longer, up to the age of about 25. The figures of height obtained by *Westerlund* show, moving toward east and north, a decrease. The figures for various groups are as follows:—West Finns 1,685·4 mm., Swedes in Finland



MAP SHOWING THE AVERAGE HEIGHT (TOP ROW), WEIGHT (MIDDLE ROW), AND CEPHALIC INDEX (BOTTOM ROW) OF THE INHABITANTS IN VARIOUS PARTS OF FINLAND.

L = Lappi Kn = Kainuu (North Pohjanmaa) P = Pohjanmaa (south). Sa = Satakunta. H = Häme. S = Savo. Kr = Karjala (north and south). Å = Åland (Ahvenanmaa) Va = Varsinais-Suomi U = Uusimaa.

All other height measurements have been taken of fully grown people (Lapps according to *A. Elfving*, others according to *Wilskman*), except the measurements of the men from Åland (according to *Westerlund*), which show the height of youths of conscript age (21 years) (the figure is thus too small). The weight of the body measurements are according to *Wilskman*. Cephalic indices are according to *Westerlund*, except those of the Lapps, which have been obtained by measuring Lapp skulls from the collection at the University of Helsinki. In the bi-lingual districts, Pohjanmaa and Uusimaa, the figures in brackets give the cephalic index of the Swedish-speaking population.

1,684·2 mm.. Hämäläiset 1.678·5 mm.. Karjalaiset 1.653·7 mm.. Kainulaiset 1,644·0 mm. Also this difference has previously been accounted for as being due to the varying extents of Teutonic admixture. This influence may, of course, have been contributory in reaching this result, but recent investigations have shown that for the most important causes of the difference in height one must look to other quarters. *E.g.* a Lapp admixture of varying strength has exactly the same influence. But of late special importance has been attached (on the strength of *Kajava*'s investigations) to the importance of exterior circumstances on this point. One has to notice that the south-western and western parts of Finland have been longer inhabited: the general living conditions there are better than in the east and north of Finland, especially as even now the inhabitants of the extreme North-Eastern Finland have to fight in their poor and sparsely-populated district during several years against famine and other wants. All this has its influence in diminishing their average height, and even more so in prolonging the growing process. Thus at the age of 21 they lack more of their final height than the western Finns and Swedes in Sweden, and this fact has, of course, a lowering influence also on the average height for the entire Finnish area. During recent years, with improved conditions, the average height for the Finns has risen considerably. *Westerlund*'s measurements refer to 1885–92. In the army measurements, which took place in 1921–2, the average height for Finns (males) of the age of 21 reached the figure of 1,700 mm.. thus being remarkably higher than the figure obtained 30 to 40 years earlier (when it was 1.668 mm.). On an average the Finnish conscripts grow 13 mm. a year, while the men in the poorest north-eastern parts of Finland at the age of 21 grow as much as 28 mm. This is a clear proof that the latter are not yet fully grown at the said age. The present average height of fully grown (25 to 45 years) men in Finland is 1.711 mm. according to *I. Wilskman*. In the different parts of the country it is as follows:—Varsinais-Suomi (Finland Proper) and Satakunta 1.725 mm.. Häme 1.717 mm..[1] Uusimaa 1,714 mm.. Pohjanmaa 1.710 mm.. Karjala 1.698 mm.. Savo 1.696 mm. The difference between the various parts are not excessive, the reasons being as I have already explained, besides the varying Teutonic admixtures, the varying Lapp mixture, and different exterior conditions. Very illuminating in this respect are the records which we have regarding the height of Finnish soldiers about 120 to 150 years ago during the Swedish rule. The age of the men in the army in those days was extremely variable, ranging from under 15 to over 70. The number of those between 24 and 45, whose height measurement we know, was 18.406 men. According to *Kajava*, the average height was for Satakunta 1.695 mm.. Varsinais-Suomi 1.694 mm.. Häme 1.691 mm.. Pohjanmaa 1.690 mm.. Uusimaa 1.688 mm.. Savo 1.682 mm.. and the average of all was 1.691 mm. The increase of height of the whole country during

[1] In the measurement of fully-grown Hamalaiset, which took place in 1924, an average height of 1,721 mm. was reached (*Kajava*).

the 120 to 150 years has been 20 mm., but varies in different parts of the country. It is greatest in the west of Finland (Varsinais-Suomi 31 mm.) and smallest in the east (Savo 14 mm.). When we take into consideration that the conditions in Finland 120 to 150 years ago were much more primitive, and poorer than at present,[1] and that since the west of Finland has advanced more quickly than the east, it becomes quite comprehensible that, whilst the present greatest difference in height between the different parts of the country is 1,725 − 1,696 = 29 mm., in those days, while the exterior conditions were more alike all over the country, it was only 1,695 − 1,682 = 13 mm. It is hardly probable that mixture of races could have caused such a difference between the different parts of the country during the short period of 120 to 150 years.

There are a few more points which emphasize the theory that the most essential factor in the difference of average height in the various parts of the country is the influence of exterior conditions and not the varying Teutonic mixture.

(*a*) The border-line between Finland and Russia passes through the area inhabited by the Karjalaiset. The average height of those living on the Russian side, *i.e.* under less favourable conditions, is 1,664 mm., the average height of those on the Finnish side is 1,698 mm., although both belong to the same people.

(*b*) The average height of the Hämäläiset was, 120 to 150 years ago, 1,691 mm., and that of Uusmaalaiset 1,688 mm.; it has since risen in both cases, being now 1,717 mm. for the Hämäläiset and 1,714 mm. for the Uusmaalaiset. Now, if the cause of the greater average height in the western parts of our country were the stronger Teutonic influence, one would expect that the average height in Uusimaa, where the majority of the Swedish-speaking element of Finland lives, would be bigger than in Häme, where there is no Swedish population whatsoever.

(*c*) In the Finnish army 120 to 150 years ago were also 251 Swedes, natives of Sweden being in fact only a very small number. Their average height was 1,691 mm., thus the same as the average height of the Finns at that time and smaller than the average height at that time in certain parts of Finland.

It may be seen from the above that *the Finns distinctly belong to those European peoples who are considered tall, the average height of fully grown men being about* 171 *cm.*

Cephalic Index.

As previously mentioned in another connection, the Finns are counted amongst brachycephalics. *G. Retzius* studied more than 100 skulls, but he considered this

[1] In Pohjanmaa, which is now one of the most thriving parts of the country, in those days the houses were without chimneys; and regarding these, *Linnæus* related in an interesting way in his "Lachesis Lapponica": "The houses, or, rather, smoke-huts, are called *Pyrter* in this part of the country," etc.

number too small to come to any decision: the greatest number of the skulls proved to belong to the mesocephalic class (index 76·0 to 80·9), next in order were 39 skulls in the brachycephalic class (index 81·0 to 85·4), then followed 17 skulls in the dolichocephalic class (to 75·9), and finally 4 skulls in the hyperbrachycephalic class (from 85·5). *Virchow* and *Hällstén*, and previously *A. Retzius*, have investigated smaller numbers of skulls. According to the investigations of *Westerlund*, the form of head of the Swedes in Finland is generally dolichocephalic: there is, however, a fair number of brachycephalic, 30 to 41 per cent. Amongst Finns brachycephaly becomes more general when moving eastwards or northwards. There are 35 to 36 per cent. brachycephalics in South-West Finland (thus a dolichocephalic majority of 65–64 per cent.). In Uusimaa and Hame there are 49 per cent. brachycephalics, in Savo 55 per cent., in Karjala 64 per cent., in Kainuu (North-East Finland) 68 per cent. For comparison, it may be mentioned that according to *G. Retzius* there are in Sweden 87 per cent. dolichocephalics (of whom 30 per cent. were true dolichocephalics and 57 per cent. mesocephalics) and 13 per cent. brachycephalics. He reached 77·9 as an average cephalic index for Sweden. According to *Lundborg-Linders*, there are 30·2 per cent dolichocephalics, 55·8 per cent. mesocephalics, and 14·1 per cent brachycephalics, and an average cephalic index of 77·7, all figures thus being very near to those obtained by *Retzius*. The cephalic index of the Finns would be approximately 80·5 to 81·0. It varies in different parts of the country: Varsinais-Suomi 79·4, South Pohjanmaa 80·0, Satakunta 80·4, Uusimaa 80·5, Häme 80·9, Savo 81·3, Karjala 82·15, and Northern Pohjanmaa (Kainuu) 82·6; the Swedish-speaking people in Finland 79·2 to 80·2, being thus nearer the Finnish figures than the Swedish in Sweden. According to *Willems*, the cephalic index on the Estonian mainland is 80·5, on the islands 80·9: the islanders are taller and fairer than the inhabitants of the mainland. If this were a proof of a stronger Teutonic mixture, it seems strange that their cephalic index is not smaller (in other words, the form of their skull more dolichocephalic) than that of the mainland people. Also on the strength of some other points, *Willems* comes to the result that the islanders, because of their isolated position, are less mixed with other nations than the mainland people. We have thus noted that *the Finns are a slightly brachycephalic people* (in several European people brachycephaly is more strongly developed than in the Finns), *thus being distinctly at variance with the dolichocephalic Swedes*.[1]

Under the leadership of the professor of anatomy, *Yrjö Kajava*, of the University of Helsinki, there has been since 1924 a great work on foot for the purpose of making clear the anthropological characteristics of the Finnish people. A number of medical

[1] The following figures may be of interest:—The average length of head of the Swedes 193·8 mm., greatest width 150·4 mm. (*Lundborg-Linders*); of the Estonians—on the mainland 192 mm. and 155 mm.; on the islands 196 mm. and 158 mm. (*Willems*). The "short-headed" Estonian head, according to these figures, is not absolutely shorter than the "long-headed" Swedish one, but approximately of the same length; on the other hand, it is somewhat wider

students take research in different parts of Finland every summer. This research work is being carried out in accordance with the most modern principles, mostly following the instructions of *Martin*. Of every person to be measured (men, women, and children of all ages and kinds, and of various ranks of society) a great number of various measurements are being taken, including both head and other parts of the body. In addition, observations are being taken regarding the various characteristics of the shape of different kinds of faces, etc. A number of photographs have been taken (I have appended a few of these to this article (Pls. XXII and XXIII)), and also a number of measurements of the structure of bones, etc. These investigations, however, have not yet been finished. Several scientific studies are being made, and I have given above a few details as to the results: when they are completed it is to be hoped that many an obscure point will have new light thrown upon it.

Bodily Development, etc.

Many of the researchers whom I mentioned in the earlier part of my article have studied the bodily development of babies and school-children. As was the case with the whole nation, an increase has been noticeable as regards height and weight of children during recent times. One of the most extensive works on this is that of *Wilskman*. He comes to the conclusion "that the Finnish schoolboy at the age of 7 to 20 is slightly taller than European boys generally, and that he is practically of the same height as the boys and youths of the nations considered of tall height." By investigating the results of the research work on height, weight, the size of the chest and expansion, *Wilskman* comes to the conclusion "that the Finnish boy of unmixed race is shorter and lighter than the boy of the same age belonging to a mixed race, but, on account of the sturdiness of his body, the size and expansion of his chest, the former absolutely surpasses the foreigner." I would like to mention a few co-ordinate facts as to this sturdiness of the body.

(*a*) The measurements made in Finland by *Wallenius* regarding the size of different parts of the intestines show higher figures than similar measurements elsewhere.

(*b*) The professor of pathological anatomy at the university of Helsinki, *Wallgren*, has had the experience that the internal organs of the Finns remarkably often exceed the usual average given in the text-books.

(*c*) According to *Wilskman*, the weight of a fully grown Finnish female is 60 kilo. (height well over 160 cm.), and she is comparatively solidly built as compared with European and American women.

(*d*) Already earlier was mentioned the observation of *G. Retzius*, that the Finnish skulls were remarkably strongly built.[1]

[1] I wonder whether one could connect with these features the fact that Finland has been able to produce the best long-distance runners and wrestlers, to whom especially strong inner organs and sturdy structure of body are essential?

As a "contrast" to this general sturdiness, the observation of *Kajava* may be mentioned that the skin of the Finns, especially its surface-layer ("stratum corneum"), in all parts of the body (except the palm of the hand and sole of the foot), is considerably thinner than that of other Europeans (French and Germans). It is, however, uncertain whether this depends on a racial difference, or whether it may be that the Finn bathes in his Finnish bath-house much more thoroughly and frequently than the Central European. *Kajava* has also studied the measurement of the Finnish fœtus. He gives an interesting comparison between the crown-heel length of Finnish, Japanese, and European fœtus'. He says: "... the crown-heel length of the Japanese fœtus is throughout longer than that of the European ... and Finnish fœtus', whereas the crown-heel length of the Finnish fœtus differs only very little from the corresponding measurements for that of the European, being generally a little smaller than the latter."

Classification according to Isoagglutination.

The isoagglutination phenomenon has become an additional means of proving the relationships of nations, during the last few years, as is known. In accordance therewith, one can distinguish four different classes, called A, B, AB, and O. It has been noticed that the relative extensiveness of these classes varies in different people. Opinions vary as to whether these different qualities of the blood should be considered as expressions of different primeval races, from which by mixing in different ways the modern races have been formed, or whether the relative extensiveness of the various classes in different nations is merely the result of different development. A and B qualities are dominant and O quality recessive, and the characteristics are handed down to descendants according to the laws of *Mendel*. In Finland these investigations have been made by *Streng* and some of his pupils. 1,506 persons have been examined, and these are divided in the different blood-groups as follows:—

——	O.	A.	B.	AB.	Total
Number of cases..	510	648	261	87	1,506
,, per cent.	33·9	43	17·3	5·8	100

The table shows that A group is fairly big in Finland, being practically the same as in England, France, and Germany, and slightly smaller than in Sweden and Norway, but greater than other Europeans on the whole. On the other hand, the B group is distinctly greater than is the case with the above Western European peoples (theirs is about 10 per cent.), but smaller than, for instance, that of the Russians. Accordingly O group is relatively small in comparison with the figures

ascertained elsewhere in Europe. *The Finns thus form their own group in the iso-agglutinatory respect.* The smallness of the material makes comparison between the various parts of the country uncertain.

The question of the relation of the *Swedes in Finland* to Finns and Swedes in Sweden is of interest. Apart from *Streng*, this subject has been investigated specially by *O. Sievers*, whose investigations include over 5,000 persons. He concludes that *the classification according to blood-groups of the Swedes in Finland is much nearer to that of the Finns than to that of the Swedes in Sweden.* According to this the Swedes in Finland are, if we may say so, Swedes on account of their language only, but racially they are Finns. No correlation has been noticed between blood qualities and pigmentation of iris, colour of hair, or cephalic index.

I regret to say that I have no facts in this respect regarding the *Estonians*.

In all only a few hundred *Lapps* have been investigated (*Schött*, in Sweden, 161; *Y. K. Suominen*, in Finland, 253 persons). The results differ somewhat from each other, and for this reason it is, for the time being, difficult to say anything definite on this point. There seem to be about 35 per cent. of O group, 50 per cent. of A, 10 per cent. of B, and 5 per cent. of AB. If continued investigation shows that this result is correct, it would be very surprising, or at any rate unexpected, as a classification of blood of this kind is, so to speak, even a little more "Scandinavian" than that of the Scandinavians themselves, and nearly a contrast if compared with different Asiatic peoples.

ON THE RACE QUESTION OF THE FINNS.

Above I have already commented on the theories of several older scientists regarding the race of the Finns. It has become a general opinion that the Finns were originally an Asiatic (Mongoloid, etc.) people (this is the view stated, for instance, in the "Guide to the Specimens Illustrating the Races of Mankind," of 1921, issued by the British Museum), whose original racial qualities have, however, disappeared to a great extent during their long stay in Europe, while a very intimate admixture took place, especially with peoples belonging to the Nordic race. This view is represented, amongst others, by *G. Retzius* and *F. W. Westerlund*. I have gone through for this purpose a number of general anthropological works and similar publications.[1] Most of them, as already mentioned, represent the Finns as originally belonging to the Mongolians, the "yellow race," although the details of the different writers vary greatly (*Brinton*, *Brown*, *Dixon*, *Fleure*, *Girard de Rialle*, *Gobineau*,[2] *Harrison*, *Hovelacque*, *Hutchinson*, *Keane*, *Kroeber*, *Lampert*, *Langkavel*, *Luschan*, *Peake*, *Peschel*, *Philippson*, *Ratzel*, *Schwalbe*, *Tylor*, *Weule*, and *Wilser*). Some others express the same view more vaguely (*Haddon*, *Pittard*, and *Ranke*). Several

[1] I have given the names shortly in a special list after the usual list of references.

[2] The statement is very amusing. For instance, "the Hungarians are certainly not Finns," as they have a great historical past!

speak of Finno-Ugrian or Turanian peoples without expressing a definite view on the relationship with the Mongolians (*Beddoe*, *Buschan*, *Hammerton*, *Hannay*, and *Ripley*).

As may be seen from the above survey, the Finns (at any rate, in their present shape) have no physical qualities which would point to Mongolian relationship. Regarding Estonians, *Willems* has come to the conclusion "that the Estonian differs from the Mongolians anthropologically in every respect, and that Mongolian characteristics are seldom to be seen—probably as seldom as amongst any other European people." Epicanthic fold is very uncommon as elsewhere in Europe: the feet and hands of the Finns are, owing to their strong structure, a contrast to the small feet and hands of the Mongolians, etc. It is, of course, dangerous to express a definite opinion on such a complicated subject as the racial question, all European peoples being racially very mixed, as is well known. The above-mentioned facts make one think that, for instance, the fairness[1] of the Finns might exist independently of any Teutonic mixture. There is nothing to prevent the same quality from having developed in two different quarters, or there may be in question a common primeval race. It is difficult to give a definite answer to questions of this kind.[2] *Deniker* (1926) places all the inhabitants of Finland as belonging to his European races: race Nordique, sub-Nordique and Orientals. *Karvonen* in his investigation comes to the conclusion that the Finns are a mixed race (like all other European peoples), which consists half of Nordic and half of Alpine stock. *Stoddard* is, on the whole, of the same opinion: according to him, however, the Finns are originally of Asiatic race, but at the same time he must make an additional hypothesis, that it is a question of some fair variation of the Alpine race.

Linguistic Research.

The view that the Finns belong to the Mongolian race is founded to a great extent on linguistic investigation,[3] as the anthropological facts are not sufficiently known. According to this investigation the Finno-Ugrian languages are frequently counted in a bigger group, *i.e.* the Ural-Altaic group. It has, however, gradually become clear that there is often a great incongruity between race and language. *Hertz* remarks humorously on this subject: "To me it appears that an ethnologist, who speaks of 'Aryan race,' 'Aryan blood,' and 'Aryan eyes and hair' is as great

[1] Perhaps also height. It may be mentioned as a curiosity that it has, for instance, been stated by some writers that the Finns may be the giants of the Edda-books—Jotuns—and that the Russian name for Finns (Tchoud) also would mean giant (*Ripley*).

[2] Knowing the complicated nature of the matter, *Hertz* remarks on the possibility that "many a Teuton who prided himself on his fairness may possibly have it owing to Slav or Finnish relationship."

[3] And also to archæological finds, which are being accounted for in various ways. I regret to say that this branch is too unfamiliar for me to express an opinion.

a sinner as a philologist who speaks of a dolichocephalic dictionary or of a brachycephalic grammar." And again: "Between Northern Aryans and Finns, Southern Aryans and Semites, there are obviously more similarities than between Northern Aryans and Southern Aryans." And already *Virchow* says that between the different peoples of the Finnish family there is ". . . such a great gap between the individual peoples belonging to same that it is easier to distinguish between than to unite them." Although the language of a people does not express anything of its physical qualities, *i.e.* "race," it is, however, not without importance in giving information with regard to the earlier home of the peoples speaking the language, their relationship to other peoples, and similar matters, which may have some bearing on the right understanding of physical qualities.

Without being a philologist, I would like to mention a few words on this subject chiefly according to *Sirelius*. Finno-Ugrian peoples live, as is known, in various parts of Russia and Western Siberia (besides in three independent states). They may be divided into two chief groups: Finnish (sub-classes: Baltic Finns, Lapps, Volga-Finns, Permians; amongst these may be distinguished in their turn different peoples), and Ugrish (Magyars, Woguls and Ostyaks). Except Finns, Estonians, and Hungarians (in all about 13 millions), they total in all about 2½ millions. These different peoples vary greatly in their physical qualities, which is quite natural when we take into consideration the long time which has elapsed since their separation from the joint home commenced. *Sirelius* says: "The linguistic relationship of the Finno-Ugrian peoples make it to be taken for granted that there has been a primeval language and also a primeval people, whose descendants are the present Finno-Ugrians, at least to some extent. In consideration of the fact that the primeval language already contained Indo-Germanic loan words, one must presume that the Finno-Ugrian primeval people still existed at the time up to which the Indo-Germanic period lasted, *i.e.* about 2500 B.C. What we know about the earlier homes of the Finno-Ugrian peoples enables us to form the opinion that the original home was neither in Asia nor in the northern parts of Europe." The primeval home was probably in the bend of the River Volga. About this time (2500 B.C.) the separation began to take place, and for this reason it is futile to expect that there should be more physical and linguistic unity between the different people of the Finnish family than there is between the various "Indo-Europeans"; say, for instance, the English, Greeks and Hindoos. The later migration of the Mongolians could not have had much influence on the Baltic Finns, who were then moving westward and northward, but it may easily explain any Mongolian features which may be seen amongst the Finnish peoples who had settled further east. What is the relation of the Finno-Ugrian language-group to Asiatic groups? *Sirelius* says: "The thought which amongst other scientists has been expressed by the famous student of Finnish language, *M. A. Castrén*, that the Finno-Ugrian languages are related with the Turco-Tartarian languages, has not been proved scientifically."

More supporters have arrived at the view which, on account of certain primeval words common to both, presumes a relationship between the Finno-Ugrian and the Indo-Germanic languages. *Ripley* also mentions varying theories, according to which there was a joint ancestor-language before the Finno-Ugrian and Aryan language-groups, the original form of which the Finnish language has maintained in a purer state than the Indo-European languages (*Wolff* states the matter in practically the same light). *Karutz* is inclined to think that there lived between the Baltic and Yenissei an Eurasiatic primeval people ("fair-skinned people with broad, flat, little-developed face, big straight eyes, straight nose: they have no features remaining of Mongolians"), whose remainder in the west were peoples of Finnish family, in the east some North Siberian peoples (for instance, Ainu people), the former mixed with the Europeans and the latter with the Mongolians. The mere fact that there are so many varying opinions on the subject shows that whatever the linguistic relationship of the Finno-Ugrians with other peoples may be, it in any case is of such a distant and uncertain nature that one cannot come to any conclusion regarding "race" by means of it.

We may say with some probability: *Present linguistic research does not give any definite support to the view that the Finno-Ugrian language-group is of Asiatic origin. Physical anthropological research shows that the Finns are of a distinctly European race. The view that the Finns are of Asiatic origin must thus*—at any rate at the present stage of research—*be considered as being without sufficient foundation.*

In this way the question is being dealt with, for instance, in *Lundborg-Linders'* work (an article by *R. Nordenstreng*), which gives, in addition to Nordic, Alpine, etc., races, a special European race called the East-Baltic race, to whom the Finns on the whole belong.

CONCLUSION.

With all the reservation which must always be observed in such a complicated matter as the question of race, I can shortly state:

(1) The present Baltic Finns are a distinct European race, which, as regards height, and colour of hair and eyes, most nearly resembles the Nordic race, but from which it differs in being more brachycephalic, and also in other respects. For this reason it may be easier to distinguish it as a special East-Baltic race collateral with other European races such as the Nordic, Mediterranean, Alpine, Dinaric, etc.

(2) Linguistically the Finno-Ugrian languages form their own entirety, the relationship of which with other language-groups is still vague regarding several points and, in any case, so distant that such relationship can hardly have any "racial" importance. Theories have been stated regarding the possible distant relationship of the Finno-Ugrian languages as well with Indo-Germanic as with Turco-Tartarian.



FIG. 1.—A MAN OF 63 FROM HÄME. HEIGHT, 1.720 MM. HAIR, DARK BROWN. IRIS, BLUE. CEPHALIC INDEX, 78·7.



FIG. 2.—A YOUNG WOMAN FROM HÄME.

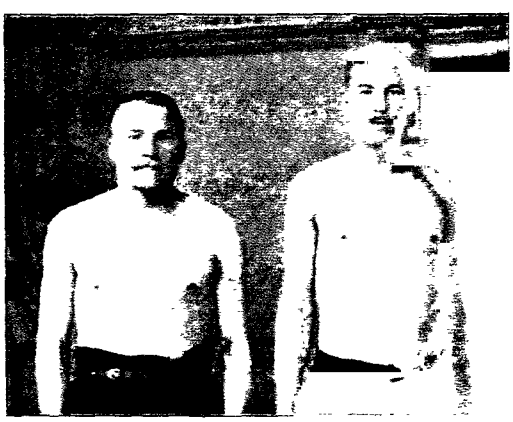




FIG. 3.—MEN FROM HÄME.



FIG. 4.—MAN FROM POHJANMAA.

PHYSICAL ANTHROPOLOGY IN SUOMI (FINLAND).

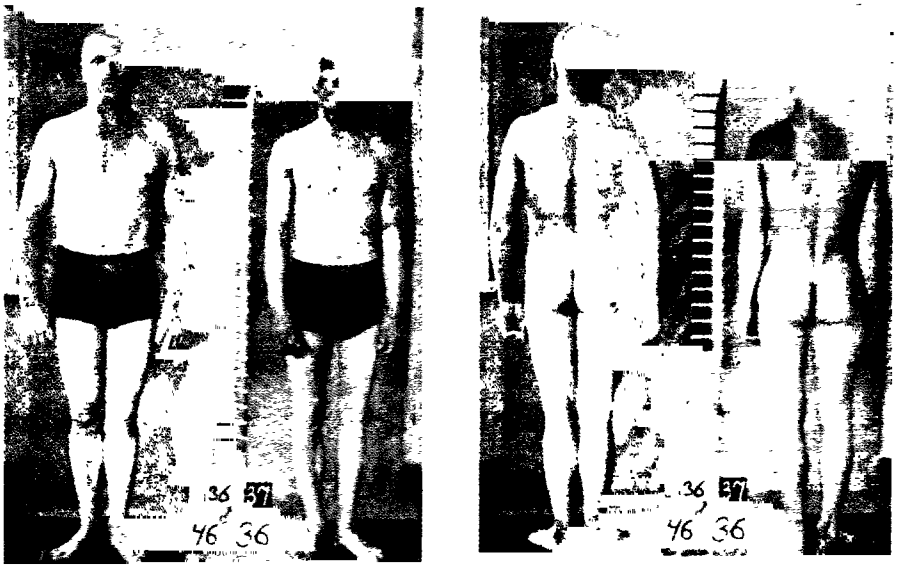


FIG. 1.—TWO MEN FROM SAVO

L 136.—AGE, 46 YEARS. HEIGHT, 1,642 MM. IRIS, BLUE. HAIR, LIGHT BROWN. C.I., 81·0.
L 137.—AGE, 36 YEARS. HEIGHT, 1,616 MM. IRIS, BLUE. HAIR, BROWN. C.I., 77·8.



FIG. 2.—A MAN, AGE 26, FROM SAVO

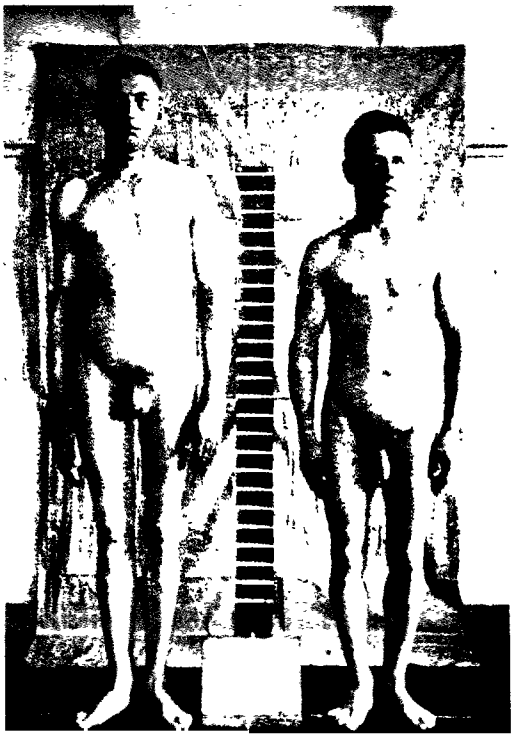


FIG. 3.—MEN FROM SAVO.

Much more than what is *known* has probably been *written* about the mental qualities of races. Regarding the Finns, there still arises the following difficulty: several great men and women of Sweden have some Finnish blood in their veins. It is a question of taste whether they are to be considered gifted on account of this or in spite of this. The higher education of the Finns has had to surmount very great difficulties (even as late as about 1850 a law was passed forbidding the printing in Finnish of any literature except of a religious or economic nature!). Since our independence things are quite different. I do not want to make a specific list of the achievements of our civilization, presuming that it will reach European knowledge by its own force. We Finns are convinced that it will not last long before Europe realizes that the Finns are not only one of the strongest people in the world, but also one of the most gifted races of the world. I conclude by quoting the statement regarding the Finns in *Hammerton*'s extensive work: "The Finns in several ways resemble the Scots. To be liked, as a people, they must be intimately known. They are independent in character, brusque in manner . . . Like the Scots, they are fond of liberty,[1] they are persevering, they value education for its own sake . . . For the Russians they have a contempt as well as a dislike . . . No country except Scotland, which is as poor in natural resources as Finland, and as severe in climate, has aroused so fierce a patriotism . . . In every direction the prospect opening out before the Finnish people is full of promise."

I have much pleasure in thanking all those who have helped me, in one form or another, with this article: my master, Professor *Yrjö Kajava*, the *Finnish Legation in London*, Dr. *A. C. Haddon*, Mr. *A. Stauffer*, and Miss *Ann Coutts*.

[1] And thus also, *e.g.* the Mordvians, where they live forgotten by the whole world, in 1743. "armed with bows, spears, and flint-locks, 1,000 men strong, met at Sarlei troops provided with guns. . . . The leader o the revolt . . . was sentenced to death at Moscow" (*Sirelius*).

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INCEST AND DESCENT: THEIR INFLUENCE ON SOCIAL ORGANIZATION.

By Brenda Z. Seligman.

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INTRODUCTION.

RECENT psychological investigation has shown the overwhelming importance to the individual, throughout life, of the emotional reaction to environment during his first few years. That the impressions left from these emotional reactions are produced within the narrow limits of the family would appear a truism—yet this fact presents a formidable problem to social anthropologists. The discovery of the classificatory system* of relationship by Lewis Morgan led to the classical controversy relating to promiscuity and group marriage.† Since then the well-deserved attention given by field anthropologists to clan organization has caused many theorists to neglect the family and to consider some larger group as the primitive social unit. Hence exogamy—the prohibition of marriage within the clan—has been regarded as the primal law, and the prohibition of incest as a secondary development. Rivers even went so far in support of the classificatory system of relationship as to suggest the possibility of a group of women sharing the responsibility for the upbringing of children, which might be looked upon as a form of primitive group-motherhood.‡

* For those who are not familiar with the classificatory system of relationship, it may be well to give a brief explanation.

This system is closely associated with the clan organization; it has several main varieties and many important modifications. It is found almost all over the world, in Asia, Oceania, Africa, and America—traces of its existence have been seen by some scholars in Europe. The outstanding feature, in contradistinction to our own family system, is the extension of the use of terms which denote close physiological kinship to whole classes of persons, to some of whom kinship cannot be traced. These persons are related to the ego, either by real or fictitious links, to persons who themselves are really related. Examples may be taken of the simplest classificatory relationships—mother-child and brother-brother (or brother-sister). A child uses the term "mother," not only to his own mother but to his mother's sisters, not only to the true sisters of the mother but to those whom she calls "sister." All these women call him "child." He calls all the other wives of his father "mother," and, as by the same law which extended the use of the term "mother" to his mother's sisters, he calls his father's brothers "father," so he calls the wives of his father's brothers "mother." As the mother's sister is "mother," so the mother's sister's child is "sister." We must now return to those "mothers" who are "mothers," because the true mother addresses them as "sister," and we shall see that the children of such women are again brothers and sisters. Thus a vast number of persons of the correct generations become either "brothers" or "sisters" to one another, or "parents" and "children." The recognition of this classificatory relationship between whole groups of persons never obliterates the closer family ties which exist at the same time.

† A peculiar feature of this controversy is that those who recognized the classificatory system and all its interesting variations paid insufficient attention to the social value of the family, while the champions of the family failed to understand the classificatory system and its social value. For a detailed account of the controversy and criticism of all the most important theories, *see* Westermarck, *The History of Human Marriage*.

‡ "On the Origin of the Classificatory System of Relationships," in *Anthropological Essays presented to Edward Burnett Tylor* (1907). It is possible that Rivers would have revised this scheme for the evolution of the classificatory system, and there are some indications in *Social Organization* (1924) that his ideas on the subject may have changed; however, he never wrote anything actually refuting it, and the Tylor Essay has been posthumously reprinted in *Social Organization* without revision. (*See also* f.n., p. 233.)

On the other hand the chief champion of the family, Westermarck, who has held out against both primitive promiscuity and group marriage, put forward the theory that housemates who have grown up together are not mutually attractive, and that this sexual indifference ripens to a feeling of aversion when the act is thought of; this he considers to be the "fundamental cause of the exogamous prohibitions."* Thus, according to his theory, the observance of the incest laws is a habit which has been formed within the family without any great difficulty, because the temptation was not severe. If this could be granted, the sanction for exogamy and other marriage prohibitions becomes a greater mystery than ever. These laws divide the cousins in the most arbitrary manner into marriageable and non-marriageable persons, as may be seen in the table accompanying this paper, and it is difficult to imagine how a supposed aversion to housemates could form either the guiding sentiment for obedience to such rules or the force which led to their institution. Social anthropologists have thus either to ignore the findings of psychology and to consider savage man as having a totally different mental make-up to that of modern civilized man, or to reconsider the existing savage forms of social organization in the light of modern psychology. Here it must be stated that there is great need for caution to avoid a vicious circle, for Freud has accepted Atkinson's "primal law," an hypothesis which regards exogamy as the first law, evolved in a primæval horde (the so-called Cyclopean family of *Homo Alalus*), and though Freud appears to be dealing with a small family group, the anthropological data on which he relies are not those of any known family group, but the hypothetical condition supposed to be found in this "primæval horde," actually a group larger than that of the human family.

Naturally I approach this problem, on which so much has been written, with the greatest diffidence. In the field, both among the Veddas and in the Sudan, I have studied kinship systems and marriage regulations, and have come to doubt the statement made by Rivers that the classificatory system of kinship was founded on the clan.†

* *Op. cit.*, vol. ii, p. 192.

† This statement appeared in *Notes and Queries on Anthropology*, 4th ed., 1912, p. 150. Summing up his examination of the classificatory system in his third lecture on kinship given at the School of Economics in 1913, Rivers said: "From that I was led to refer the general features of the classificatory system to the dependence of this system upon the social unit of the clan as opposed to the family which I believe to be the basis of our own terminology of relationship" (*Kinship and Social Organization*, 1914, p. 82). However, in *Social Organization*, published posthumously from material prepared by Rivers and used in his lectures in 1921 and 1922, the following occurs: "The nature of the classificatory system has now been made fairly clear. It depends upon kinship and sibship, upon the membership of a family and of a moiety or clan. Again, certain of its features are only to be explained as the outcome of the dual organization of society in which it was obligatory for certain relatives to marry" (p. 77). From these extracts it may be inferred that the sharp distinction implied by the statement that our kinship system is founded on the family while the classificatory system is founded on the clan, together with the fact that the classificatory system is used by more primitive people and hence is older, does not do real justice to Rivers' views concerning the family in primitive society. His insistence that the classificatory system cannot be understood without the existence of a dual organization will be referred to later.

It would be impossible to say how much I owe to the numerous conversations I have had with Professor Malinowski, spread over a number of years, during which he always spoke of the importance of the family and I defended the clan; however, in 1924 I had recognized that the facts supported his position, and I stated this in an article on gerontocracy.* Malinowski's views are well shown in his recent book *Sex and Repression*.† He considers the family as the cradle of culture, and its function, the maintenance of the continuity of tradition, to be as important as the propagation of the race.‡ "Not only is the family the link between biological cohesion and social cohesion, it is also the pattern on which all wider relations are based."§ "Within the group which is responsible for the first steps in human progress there arise the two main perils of humanity: the tendency to incest and the revolt against authority."‖ Although he recognizes the bilateral nature of the family group he is aware of the difficulties that this pattern introduces and the need that arises for the individual to attach himself to one side or other of the family, hence the need for unilateral kinship: "It is the only possible way of dealing with the problems of the transmission of possessions, dignities, and social privileges."¶

Although entirely in sympathy with Malinowski's view, that the clan had developed from the family, and his treatment of the parent-child type of incest, I am unable to follow his treatment of brother-sister incest and exogamy. He makes a brilliant exposition of the psychological advantages of mother-right to nascent culture, and shows that this form of organization is not an anomaly. So far as I can gather, he sees the development of clan organization from a family characterized by mother-right:—

> "The extension of kinship beyond the family implies in many societies the formation of exogamy side by side with the formation of clans. Under mother-right, the prohibition of incest within the family is in a simple manner extended into the prohibition of sexual intercourse within the clan. In a matrilineal society, therefore, the building up of the general sexual attitude towards all women of the community is a continuously harmonious and simple process. In a patriarchal society, on the other hand, the rules of incest which apply to the members of the family are not simply extended to the clan, but a new scheme of ideas of the sexually licit and illicit has to be built up. Patrilineal exogamy does not include the one person with whom incest should be most

* *J.R.A.I.*, vol. liv, "Marital Gerontocracy in Africa."

† Bronislaw Malinowski, *Sex and Repression in Savage Society*.

‡ *Op. cit.*, p. 219.

§ *Op. cit.*, p. 239.

‖ *Op. cit.*, p. 224. This is not quite clear; it would seem rather that the need to maintain authority is an important element underlying the prohibition of incest.

¶ *Op. cit.*, p. 269. It will be seen that Malinowski treats descent, inheritance, and succession jointly under mother-right and father-right. For reasons that will be seen later, I prefer to follow Rivers in keeping those principles separate.

rigorously avoided, that is the mother. In all this we see a series of reasons why mother-right might be considered a more useful principle of social organization than father-right. The utility is obviously associated with that level of human organization where kinship plays a paramount sociological part in its narrower as well as in its classificatory form."*

From this paragraph it would appear that Malinowski considers that the human family, as developed by culture, itself evolved a system of descent, though he never denies the agglomeration of families with one another.

It is here that I venture to differ somewhat from Malinowski. While agreeing with him in looking upon the family as the cradle of culture for all the universally human elements in culture (and in this class I would place the incest laws, for reasons which will be considered in detail later), I think some group larger than the family must be responsible for carrying on the traditions of a people which are peculiar to it and which make its culture specific. That is to say, while Malinowski stresses the importance of the family in regard to the transmission of culture, I would draw attention to the equal importance of some larger group, even in a quite early state of society, and it is to this larger group that a system of descent is essential.† With the evolution of this larger group a conventional attitude to descent must have been accepted and the various forms adopted. The obvious *à priori* reason for this opinion is that if culture had only innumerable and somewhat isolated families to carry on its tradition from generation to generation, it might tend to be split into infinite variations and not to blend into the specific culture patterns that are actually found all over the world. The possible grouping together of separate families into larger groups can be brought about on either a relationship or a local basis.‡ These two methods are not mutually exclusive and may coincide.

The clan is a grouping on a relationship basis which fulfils the necessary conditions for unifying custom into a cultural whole. Being built up on a kinship pattern, it affords an organization well fitted to primitive folk, and the kind of loyalties due to the family can easily be carried over to the clan: its exogamous nature (carried over from the idea of incest within the family) brings it into touch with other similar groups. Thus clans not only carry on their separate traditions, but by marriage—unions which are necessary because of exogamy—combine these traditions to form a still larger cultural unit. The clan is the perfect vehicle for tradition; those families which have not produced a person of outstanding character enhance their

* *Op. cit.*, p. 271.

† In private conversation Professor Malinowski tells me that the gap in his analysis was due rather to the slightly different aim of his argument in the book quoted. In his article "Kinship" in the forthcoming edition of the *Encyclopædia Britannica*, this inadequacy of presentation is remedied.

‡ Occupational grouping can only occur in more highly developed societies than we are considering at present.

personal importance by the sense of relationship to clan heroes. The clan encourages ancestor worship and hero culture at the same time, and combines these cults to produce social solidarity. The one condition necessary to the clan, which is not important to the primitive family, is a *definitely recognized unilateral method of tracing descent.* Here it must be noted that I am not dealing with mother-right or father-right as an organization, but with descent only, *i.e.* a system for the affiliation of one generation to another. Every one has four grandparents and eight great grandparents: one cannot carry on four different traditions at once, still less eight; that is to say, one cannot belong to eight different social groups of similar character at the same time. A choice must be made of one group only. Hence the recognition of descent is a functional necessity, independent of any knowledge or ignorance of paternity, and the adoption of some definite form is necessary to the clan for social cohesion and for carrying on tradition. With the recognition of unilateral descent the clan came into existence. It will be seen in the sketch of the primitive family that follows that descent need not have this significance to the family.

Having parted from Malinowski on the point of the value of descent to the family, it will be seen that my treatment of incest is necessarily somewhat different. My reasons for treating descent, inheritance, and succession separately are also apparent—a definite method of tracing descent is unnecessary to the primitive family until that family combines with other families to form a larger social group. While the family is the only stable form of group (that is to say, while its contact with other families does not create binding social ties) inheritance and succession may develop independently of descent. It is possible to see scope for considerable variability of an accidental nature in the type of inheritance in such families. Property itself and the right to inherit it would probably be of slight importance compared with the importance of skill to use and maintain it. However, supposing that personal property and the exclusive rights to certain territories had developed, but no social ties grouping one family firmly to another family, then the typical matrilineal form of inheritance to sister's son could not take place, for there would be no firm link between a man and his sister's son, brothers and sisters having parted at marriage to form social groups containing their respective spouses and children. Thus inheritance in the primitive family would be to own children, but not necessarily defined as patrilineal, because accidents of birth would decide whether it passed to male or female children: if there were no sons, male heirs beyond the small family circle would not be sought and property would pass to daughters. It would be possible for women to inherit from their mothers and men from their fathers. In such a society it is useless to speak of succession to office—office implies a more complex social organization.

For some time Malinowski has been teaching the absurdity of regarding matrilineal traits in a patrilineal organization as survivals, and has pointed out that on the survival hypothesis almost every culture examined is in a state of transition. My

own investigations in the Sudan among dominantly patrilineal people support Malinowski's contention, *i.e.* that the matrilineal features in these organizations have functional value and cannot be regarded as "survivals," although among one people there is definite historic evidence, and among another linguistic evidence, that a change from a dominantly matrilineal to a dominantly patrilineal organization has taken place.* However, these investigations do not seem to throw fresh light on the problem of the relationship of the clan to the family.

It was from the study of Deacon's brilliant discovery of the six-class system in Ambrym that I realized the entirely arbitrary nature of descent even to the natives themselves.† The Ambrym peculiar convention divides society into six groups, and the marriage laws resulting from this create no confusion, though the principle on which these laws are regulated seems obscure to observers.‡ Thus, when the method of tracing descent had been elucidated, it seemed clear that the complicated marriage regulations were simply due to exogamy, *as this law was understood in Ambrym.* But to understand the working of exogamy in Ambrym it was first necessary to reconsider the meaning of *descent.* Encouraged by this result, I proceeded to examine the Pentecost social organization as described by Rivers in *The History of Melanesian Society,* and came to the conclusion that the kinship terms and the marriage regulations were also ruled by exogamy, but that the system of tracing descent was unusual.§ Thus, a system which Rivers had said had reached the "limit of complexity that the human mind could stand," when he had looked upon it as regulated by direct matrilineal descent, became quite simple, after a more thorough examination of the conventional mode of descent recognized locally.

In the New Hebrides, where apparently complicated marriage regulations are held, marriage with certain cousins is permissible among one people and with other cousins among their neighbours; the prohibitions cannot be explained on any accepted ruling of the laws of incest or exogamy dependent on either matrilineal or patrilineal descent, but are consistent in each case once the principle of descent has been more fully elucidated. From these investigations I tabulated seven varieties of descent in operation among existing savage societies. Seeing that a more complete understanding of the rules of descent threw so much light on such complicated social organizations as those of the New Hebrides, I began to consider whether *any consistent law could be found for marriage prohibitions throughout mankind.*

* The Beja and Dinka, respectively.

† A. Bernard Deacon, "The Regulation of Marriage in Ambrym," *J.R.A.I.*, vol. lvii, 1927; Brenda Z. Seligman, "Bilateral Descent and the Formation of Marriage Classes," *J.R.A.I.*, vol. lvii, 1927.

‡ So much so that competent anthropologists had visited Ambrym without discovering them.

§ "Asymmetry in Descent, with Special Reference to Pentecost," *J.R.A.I.*, vol. lviii, 1928.

The point of view taken here is that which has been laid down several times by Professor Malinowski, especially in the article on "Social Anthropology" in the *Encyclopædia Britannica*, 1929.

I must ask indulgence for such an ambitious proposal, entailing as it does a revision of both the origin and function of exogamy and the classificatory system itself, and must state that I started without any *à priori* ideas about exogamy. Where I have seen the rule in action it is obeyed with unquestioning loyalty, yet it is impossible to trace any disharmony or lack of social cohesion in those societies where it does not exist. Indeed, the endogamous section of an Arab tribe is a closer socio-political organization than an exogamous totemic clan. Thus, exogamy is seen to be a factor of premier importance, but one whose functional nature is unknown. It is obvious that if there is any general law underlying all marriage prohibitions it must be founded on human emotions and reactions: it must be biologically sound and have a social value so great as to have become a human institution. That is to say, its ubiquity must be due to the fact that it has proved so useful to mankind that those peoples who have not adopted it have fallen out in the struggle for existence, and either ceased to exist or to have any importance. Clearly such a definition cannot apply to exogamy. The prohibition of incest is the only law that can be looked upon as world-wide, yet, as will be demonstrated later, taken by itself, incest does not account for the marriage regulations to be considered here. Socially the prohibition of incest is so wide-spread that those people who do not practise it can be considered unimportant, so that it is unnecessary to examine in detail the scanty information on incestuous unions recorded among backward or degenerate peoples; nor do the marriage rules of highly specialized societies, as the royal family in Ancient Egypt or the chiefly families of Polynesia, or the Azande, have special significance.* The main problems before us are the relationship between incest and exogamy and the dependence of marriage regulations on these two laws; hence it is necessary to reconsider the family as well as the clan, with the classificatory system associated with it.

When the rules of incest have been examined within the narrow limits of the family, the next task is to investigate the meaning and value of descent. Only when this has been done can the relation of incest to exogamy be determined and the problems of marriage regulations, both in the classificatory and class systems, be faced on a firm basis. For this purpose I have examined the marriages permissible among first and second cousins in seven different social organizations existing in savage society at the present day. I have compared—

(1) A typical exogamous clan group with matrilineal descent.
(2) A typical exogamous clan group with patrilineal descent.
(3) A dual organization with matrilineal descent.
(4) A dual organization with patrilineal descent.
(5) An Australian system (Type I) with four classes.
(6) The Arunta, or eight-class system (Type II).
(7) A kindred grouping without clans.

* *See* "Endogamy," p. 253.

THE FAMILY GROUP.

The treatment of the prohibition of incest within the family which follows agrees closely with that given by Professor Malinowski in *Sex and Repression*, part iv. I have here reformulated it from my own point of view. The family group that is described here is not an hypothetical one, dating back to a time when the sexual impulse had a seasonal limitation and man was scarcely human, but is a real condition which exists to-day and which may have evolved very early in the history of *Homo sapiens*. In actual fact, however, such families do not exist in isolation but are associated together in larger groups, viz., the clan and local group. The existence of an earlier human or pre-human group which was governed only by the power and sexual exclusiveness of one adult male need not be discussed, as apart from the fact that we have no certain data to go upon such a group cannot be regarded as a form of social organization.

The family of the present day is found associated with many other social factors—with clan organization and organized local grouping. It is profoundly influenced by the mode of life of the people, and above all by the prevalent ideas of property. In considering the question of incest within the family it has seemed best not to describe the family in any given people, for it would be difficult to avoid giving emphasis to the prevailing conditions. I have hence regarded the human family as conditioned only by its essential biological and psychological needs, *i.e.* a group in which children can not only be born and reared, but which is so stable that they can retain their place in it until they reach maturity. Such a group I call the "primitive family," and it may be supposed that such a minimum family group, which we find everywhere associated with more complicated social conditions, is the prototype of the human family as a social organization.

The primitive family is thus not supposed to live in isolation, but is for the purpose of this analysis stripped of the specially conditioned types of grouping which are now found in different parts of the world. Association with other groups is a necessary condition of life, but the type of association is not predicated, as this must be dependent on environment including economic conditions. It is necessary to assume a state when such associations were temporary, and in no way binding. That is to say, there must once have been a condition of society before clan organization had come into being or local organization had crystallized, but which was favourable to their formation. Each family group would have occupied its own territory, as among the Veddas to-day, and though the acquisition and maintenace of hunting territory in such circumstances might lead to fighting, it would not cause a perpetual state of enmity between group and group, any more than it does among birds. There would have been seasons, conditioned by the food supply, when families could meet on common ground or pass over one another's territory without creating suspicion.

The family group as depicted must not be considered as matrilineal or patrilineal, for descent is of no importance to such a group. It is supposed that when a couple mated, if they were not capable of becoming self-supporting, they would stay with the group of either parent temporarily, but probably on account of the food supply would never stay so long that three generations would become associated together for any considerable length of time in one group. In the same way brothers would not tend to settle together in associated groups when mated, nor sisters to remain in a group accompanied by their husbands. Thus the recognition of relationship beyond the family would be unimportant, and unlikely to be remembered, the classificatory system would have no meaning and therefore no existence, and exogamy would be unknown. Men of one family group would marry women of any other group. It is for such a group as this hypothetical primitive family that we must consider the meaning and value of the incest laws.

In order to understand incest we must first consider the normal reactions between the members of one family and their behaviour towards one another, the needs of the members *qua* individuals, and the needs of the family as a group. For this purpose we must give attention to each period in the life-history of the individual when rivalry might be likely to arise between himself and some other member of the family group: when this is done we shall see the value that the laws of incest have for mankind.

Marriage.

Whether promiscuous mating will satisfy the sexual needs of the adult male or not, the adult female requires a more permanent union. Where conditions of life are hard, those women who have not secured a partner to help feed and protect them during the later stages of pregnancy, and the infancy of the child, are unlikely to rear their offspring. Thus a woman needs a more or less permanent union, *i.e.* marriage with one man, and it is difficult to imagine how she can obtain this except by means of sexual attraction and services mutually rendered. In the picturesque descriptions of the matriarch that have so often been made, we are shown furtive lovers who visit independent women and return to work in the households of their sisters, but we are never told what is the force that keeps them in the service of their sisters or drives them away from their mates. Groupings of this sort need not be considered, while such societies as that of the Garo of Assam and some of the Pueblo Indians which have developed on matrilineal lines cannot be regarded as specially primitive, their matriarchal character being largely associated with the inheritance of property and matrilineal local grouping.

Whether from the woman's point of view polygamous or monogamous unions are preferable probably depends more upon the food supply than anything else. A woman who is occupied with the suckling of her infant is unlikely to be jealous of the sexual attention that her husband gives to another woman, if such attention does not weaken the protection he gives to her and her infant; the presence of

another woman may actually be an advantage to her, except where the food supply is precarious.*

The family group that we have to consider is that of a woman, her husband and her children. This is the group whose solidarity is so essential to mankind that those peoples who have not been able to maintain it have probably died out altogether, or at least dropped far behind in the struggle for existence. Where conditions are favourable, a man is a member of as many such groups as he is able to satisfy, *i.e.* he may be polygamous, and the family group may be composed of one man and one or more women and their offspring. Primitive conditions would, however, preclude the possibility of large harems.

The long immaturity of the human species demands a stable grouping for the development and protection of the young. It is the prohibition of incest that protects the monogamous or the polygynous marriage and forms a stable social grouping out of the natural family. The traditional attitude of respect towards the elder generation in the family is the outcome of many conflicting emotions: it does, however, embody the fundamental feeling of dependence of the very young for the mature, and is of great value to the family as a group, for without authority the group cannot stand as a unit against outside competition, and would probably even be incapable of becoming self-supporting.

There are certain factors in the life-history of the individual that must be remembered, and it should be noted that while some are necessarily universal others vary with the type of society.

The Relationship of Husband and Wife within the Family.

The relationship between husband and wife is essentially one of give and take. One partner may dominate the other and exercise power, but, regarded by the children from the point of view of status, the husband and wife together form the elder generation and are bound together by mutual duties and responsibilities.

The Parent-child Relationship.

During infancy the only other person of whom the child of either sex is aware besides himself is the mother; from her he receives all satisfactions and disappointments: maternal instinct will cause the former to prevail. It is inconceivable that the new-born infant is aware of its own sex, *i.e.* that it should know whether it is of the same sex or the opposite sex to its mother, but the emotional response to sensual satisfaction or disappointment is displayed at once. This, however, is

* It is unnecessary to consider polyandrous unions, in spite of the fact that some theories have given them a place of importance in social evolution. A polyandrous union does not satisfy the primary needs of either a man or a woman. Such unions exist to-day only in special circumstances, where there is a shortage of women. (*Cf.* Pitt-Rivers, *The Clash of Culture*, 1927, chap. VIII.)

undifferentiated, and thus for some time emotions develop in the infant of both sexes in relationship to the mother only. In late infancy or early childhood the father enters the child's life ; his influence over the child will vary considerably, both according to the type of society and to the personal character of the father, for the parental instinct in the male has not the force or the stable character of the maternal instinct. In late infancy the child almost certainly recognizes that it gets a different response from persons who are like its mother, *i.e.* females, or persons who are unlike. *i.e.* males. At what stage it recognizes to which sex it belongs itself, *i.e.* a male infant associates itself with those who are unlike the mother, and a female infant with the mother and those who are like her, it would be impossible to say. It is, however, observable that very young children, perhaps still in infancy, do respond differently to the sexes, though there may be much variation in the age and the degree of the response. At this stage it may be said that the child is aware of and responds to sex *according to its physical and mental capacity.* Both for the boy and girl there must be some rivalry between it and the male parent, for the father interferes with the infant's complete possession of the mother. For the male infant he is the prototype of the adult male, *i.e.* that person of the same sex endowed with immense quasi-magical powers (for to the child there can be no differentiating between the possible and the impossible among the vast category of things beyond his own power). For the girl child there is a difference ; she has already become accustomed to the adult of her own sex, who is certainly omnipotent, but on whom both she and her brother can exercise all their infantile power. When the female infant first becomes aware of her father as someone different to her mother a new situation arises. Rivalry between the female infant and her father for the sole attention of the mother may exist, but it is probably more easily overcome by her than by her brother, owing to a new interest that arises, *i.e.* that of exercising the power that she has already acquired over her mother on a creature quite different to her mother, and hence to herself, but this may perhaps only be realized later. This interest, charged at present with only infantile emotions, is thus the beginning of sexual attraction.*

In considering the attachment of the primitive infant to its mother we must not picture it as the baby in our own civilization, lying separated from its mother in cot or perambulator, becoming accustomed to the touch of many different hands and

* From the sociological point of view it is necessary to see how rivalry will be dealt with within the family group at each of the critical stages at which it may crop up. But from the point of view of psychology of sex, we must not disregard that the first great emotional attachment of the male is heterosexual, though he cannot yet be aware of his own sex, and contact and identification with the father must be powerful factors in making him aware of himself as different from his mother. For the woman, on the other hand, the first great attachment is homosexual, and the effort of differentiation from the mother is not necessary ; instead of developing this attachment as the prototype of future situations, she has to learn a new form of attachment at a somewhat later stage when she comes into contact with her father. This second attachment must then become the prototype of heterosexual affection.

the sound of diverse voices, soon to find pleasure in hugging Teddy Bears and being distracted by bright-coloured toys. Comparison to the marsupial cub would really be closer, for the infant lies close to the mother's body, suspended in skins by day and huddled in her arms at night, never far from the nipple. Even at the crawling and toddling stage the primitive child can seldom be left alone, and must spend a large part of its time balanced on its mother's hip. The effect of this on the mental make-up cannot be ignored ; there can be few memories of infancy and early childhood that are not associated with the mother, and it must be repeated that this condition is true for both sexes.

As the child passes from infancy to childhood social conditions will modify its behaviour.* In early childhood the benefits received from its parents as well as their powers must foster an attitude of love and respect. In later childhood the desire for independence will run counter to this, but will hardly disturb it severely.

The human child, however, reaches adolescence (*i.e.* a period of sexual activity) before either psychical or physiological maturity, and then a strain must come. It is important that the respect for seniors should not be thrown over at this period, in spite of the growing need on the part of the young to exercise their individuality. If the youth should enter a new relationship which could upset his child-parent attitude of respect it would react badly on the family group. A sexual relationship between parent and child would be dangerous to the family group, quite apart from the directly sexual jealousies that such a situation would cause, for the child would then be raised to the social level of the parent, who could no longer exercise the authority due to the senior generation. From this point of view intercourse of father and daughter would upset the parent-child relationship and disturb the balance of family group, just as much as intercourse on the part of the son with the mother or with his father's other wives. It is important to remember this, for most theories of incest deal only with the jealousy that would arise between father and son. While it is easy to see that in the absence of a law with supernormal sanction the father would prevail and prevent such intercourse until the son reached maturity, and that he in turn would show no pity to the father, it has never been shown how a woman could prevent intercourse between her husband and her own daughter, nor indeed why such intercourse should appear in so heinous a light, since no objection is made in savage society by a middle-aged woman to her husband taking another wife as young as her own daughter. But if the prohibition of incest is looked upon as a social law regulating the behaviour of an entire social group (the family), rather than a rule which gives old men sanction for

* In our hypothetical primitive family the chief factor will vary according to whether the parents are already independent or still attached to the group of either of their respective parents. In actual savage society matrilocal or patrilocal residences, as well as the position of father or the mother's brother in the household must be considered. (*See* Malinowski, *op. cit.*)

checking the desires of their sons, the avoidance of both types of parent-child incest can be understood, as safeguards to parental authority.

The parent-child type of incest, socially regarded, is the law which prevents one person marrying two spouses who stand to one another in the relationship of parent and child.* The value of the parent-child incest law to the family group is very great, for the authority gained naturally by the parents over the children during the period of their complete dependence is thereby protected from real danger. In any case, the adolescents must want to exert their independence, but should they be able easily to satisfy their sexual desires within the family, and in so doing dispossess one of their parents, the blow to parental authority would be so great that the family group could hardly survive. If, on the other hand, a social law can be accepted which at the same time protects the mother from the son and the daughter from the father, the authority of both parents can be maintained over the children until they seek mates outside the family and themselves gain the social status of seniors without encroaching on that of their parents. The father keeps his authority over the family by accepting a rule which deprives him of intercourse with his daughter. In doing so the father gives up a real advantage, for there can be no doubt that very young girls are attractive to mature men, and it is probable that this renunciation on the part of the father has led to the custom of the betrothal and marriage of girls before puberty, the father being willing to part from their daughters before the temptation to incest becomes too strong for them. Whether the women in accepting the law of incest give up a real advantage or only an unconscious desire in phantasy may be questioned, but they certainly also stand to gain by retaining their parental sway over the household.

From the adult point of view the question is largely a social one, from that of the rising generation it is psychological. Whether the Freudian hypothesis be accepted in its entirety or not, few people can doubt that there is such a thing as infantile sexuality, and that fresh associations made during life will follow the lines of the earliest associations. Thus the adolescent sexual attachments will follow patterns formed by prescribed infantile sexual attractions. So that, at least in the unconscious, there is such a thing as a parent-incest desire. However, in the healthy adolescent the parent-image is replaced by a surrogate (and there is no reason to regard the savage as a neurotic suffering from a parent fixation) who is far more likely to be young than of the age of the parent. So that in accepting the taboo on parent-child incest, and so prolonging their own subjection to their parents, it is doubtful whether children renounce any conscious desire at all, but merely retain in the unconscious an attitude towards the parents which at first was only charged with infantile sexuality and now has been reinforced by adolescence.

The advantages to the group of social harmony within it cannot be over-estimated. The adolescents instead of being at enmity with the seniors, and breaking up the group, or possibly leaving it while still physically and psychically

* We shall return to this social formula later.

immature and scarcely self-supporting, will become the helpmates of the seniors. The elder girls will not be the rivals of their mothers, and will assist them in gathering and preparing food, hence larger families will have a chance of survival. In the same way the elder sons will assist their fathers, who, whatever the situation may be in phantasy, will not be their rivals in actual fact because of the accepted law.

The prohibition of intercourse between parent and child is a law which deals successfully with strong but conflicting emotions that the individual feels towards both parents during his life-history. As a result, the valuable emotions of love and gratitude stirred during infancy and early childhood are less likely to be effaced by those of rivalry aroused later in life, and can be stabilized into an attitude of respect.

The Brother-sister Relationship.

The relationship of the children towards one another within the same family group is that of companionship tempered by rivalry. This begins in early childhood (for to the infant the world is probably only tenanted by himself and his mother*) and, except in the case of unusually violent natures, the rivalry is merely stimulating, not severe. There is probably no check on childish sexual curiosity between brothers and sisters in primitive society. But this interest is intellectual and unlikely to be charged with emotion, for the sensations of this period are largely auto-erotic. In later childhood there seems to be more attraction towards the same sex than towards the opposite sex, so that children separate into gangs of boys and girls for amusement and occupation; thus the brothers and sisters become separated. So far as observation on both savage and civilized children goes this seems to be a natural inclination. It does not appear to be prescribed by tradition and encouraged by means of repression, as is the case in the segregation of the sexes so common during early adolescence in both savage and civilized society.

The possibility of childish experimentation in sex must not be ignored, but this seems to be a game, a childish pretence at being grown-up, and not of a highly emotional character except where definitely disapproved (but this does not appear to be the case in ordinary savage society, and is unlikely in a really primitive state). Where it is discountenanced we do not know whether the sense of guilt is heightened if it takes place between brother and sister, nor do we know whether such play in childhood leads to attraction, repulsion, or lack of interest between the partners during adolescence. There seems little evidence for Westermarck's theory that house-mates are not mutually attractive, for brother-sister incest *does* take place in spite of the almost universal law against it. With the development of adolescent sexuality the relationship of brother and sister undergoes a change. Some savage societies meet

* The relationship of twin infants to one another need not be considered, both on account of the comparative rarity of twin births and the prevalent savage custom of destroying twin children. The dislike felt by almost all savages to twins is based on a sound economic principle.

this change by imposing brother-sister avoidance ; this rule is by no means universal, although sex-segregation in some degree is common.

It may be asked, what is the value of the brother-sister incest taboo to the family group ?* If it be assumed that the parent-child incest law has already been accepted, and that there is a male and female child to every family, then there seems no reason why sexual union between brother and sister should upset the harmony of the group. There is, however, no reason to assume an equal number of adolescents of both sexes in the family, nor to suppose that they will be ready to pair on a numerical basis, rather than one of choice. Again, it is unlikely that the incest taboos arose separately in time. It must be noted that the fathers renounced a real benefit in accepting the parent-child taboo, while the sons (who, being healthy, have changed their infantile love-objective from the mother to a mother-surrogate before they have reached full sexual activity) only further repressed what was already a phantasy. It is unlikely, then, that the fathers would allow the sons so easy a triumph, by allowing them to take the daughters, for, towards them, father and son are again rivals. It would seem then, if the harmony of the group is to be maintained, the fathers must renounce all hope of union with the daughters, and the sons must do so too. Thus the brother-sister taboo imposed upon the younger generation by the father, not only prevents rivalry between brother and brother and between sister and sister, but it removes a second sphere of rivalry between father and son. The two incest taboos are thus complementary to one another and together eliminate certain possible sources of disharmony within the family group.

There is one sense in which every father sees his child as a rival, and the father in civilized society rarely makes an attempt to repress this, though the feeling may largely be compensated by parental pride. A man may have the complete attention of his wife until the birth of the first child, then suddenly her maternal interest absorbs her entirely ; moreover, while occupied with lactation she may feel little or no sexual desire. This statement is not checked by any statistics ; it is sometimes observed among women in our own civilization, but the fact that women in savage society submit to the sexual taboo during lactation may be stated in support of it. It is probable that this source of jealousy between father and child is mitigated in the polygynous family. However, it should be borne in mind that every father is likely to experience this form of jealousy, so that jealousy between father and son in later life is a revival of a jealousy already felt towards the son and which may often be conscious. On the son's part, too, jealousy of the father that may be felt

* We are dealing with the sociological value of the incest taboo, not its biological value, but it may be pointed out that the brother-sister incest laws may have a biological value, which I do not remember seeing discussed elsewhere, *i.e.* that they would tend to prevent the union between two partners *both* of whom might be physically immature. If brother and sister were to mate there might be a tendency for offspring to be produced at the earliest period physically possible. The mere fact of being obliged to go outside the family would increase the period of courtship by making it more difficult.

during adolescence revives the infantile unconscious jealousy of the father who interrupted his mother's complete absorption in himself.

The Child-parent Behaviour Pattern.

Thus there is a universal behaviour pattern between child and parent compounded of love, admiration, and jealousy, shown conventionally in an attitude of respect and safeguarded by the parent-child taboo of incest.

The Brother-sister Behaviour Pattern.

Although the acceptance of the brother-sister incest law is general, there is no universal brother-sister behaviour pattern; whereas in some societies the prominent factor in the relationship is the opposition of the sexes, which is shown by mutual respect and avoidance, in others prominence is given to the equality between the brother and sister as members of one generation. This equality is, however, often shadowed by the dominance of one sex. A Shilluk once described the brother-sister relationship thus: "We played together as children; I can say whatever I like in her presence and beat her if she annoys me." Such behaviour to a sister would certainly shock a Trobriand islander, who avoids all contact with his sister and treats her with the greatest possible respect.

No reference has been made in this study of the primitive family to the aunts and uncles, because it seems that in such a group as we have depicted there can be no stable behaviour pattern towards them. In all known societies these relatives have a very definite place correlated with local organization, descent, and the specific marriage-laws.

The natural reactions towards one another of the various members of the family group have been considered, and the modifications brought about by means of the acceptance of the laws of incest. It would be impossible to over-estimate the advantages gained to mankind by the acceptance of the incest laws—on the one hand the individual, by means of the necessary inhibitions gains character, but it is through the solidarity of the family group brought about by means of this law that the greatest social advances have become possible.

THE CLASSIFICATORY SYSTEM.

In the vast majority of peoples the rules of incest are extended beyond the immediate family group of husband, wife, and children.* It is now necessary

* The prohibited degrees in our own society (especially those of the Church of Rome) entail the extension of the laws of incest beyond the family. Further, there is evidence that our own relationship system is founded on a classificatory one, that is to say, that our family system is not the direct descendant of a primitive family but a simplification from a grouping on a clan basis (A. M. Hocart, "The Indo-European Kinship System," the Ceylon of Science, Section G, vol. i, part 4, 1928). For evidence of the classificatory system in Semitic kinship *see* my "Studies in Semitic Kinship," *Bulletin of the School of Oriental Studies*, vol. iii, parts 1 and 2, 1923, 1924

to consider the extension of these rules in their chief manifestations in savage society.

Descent in the Classificatory System.

Professor Malinowski has suggested a scheme for the development of the clan from the family.* All that need be said here is that when groups tend to stay together for a period which will bring about the association of three generations, and tradition becomes a potent force in society; when brothers who have mated keep in touch with one another and form a social group, or when adult daughters retain a permanent place in the household of their parents; then a need arises to recognize a principle of descent. The mistaken idea that descent implies an understanding of the physiology of conception, and even the working of heredity, has led to much confusion on this subject. Another complication has been introduced by the fact that almost all the most important writers on this subject have dealt with it in conjunction with totemism. It seems evident that no fresh light will be thrown on either subject until both are defined separately; it will then be time to see their relation to one another. Descent as understood in savage society is merely an arbitrary arrangement by which it becomes decided to which group the succeeding generation shall be linked.† When associations of related families attain the stable organization of the clan, bound together by common tradition and religious ideas, descent must become important, and this is so whether habitation is matrilocal or patrilocal. With clan organization a conventional principle of affiliation must be accepted and adhered to; that is to say, descent can only be reckoned along one line, either the maternal or the paternal line.

The Parent-child Relationship.

In the discussion of the parent-child behaviour-pattern, the possibility of carrying over the whole emotional situation summed up by the word for "mother," together with the accepted standard of behaviour associated with it, to some other person who is not a real parent was suggested even in the primitive family. There seems no *à priori* objection to polygyny in the primitive family, and it may have existed then, as it does to-day, within the family now associated with the classificatory system. If in the primitive family children of the other wives of the father were accepted as brothers and sisters, and the relationship of their mothers to the father accepted, then the behaviour pattern associated with the "own mother" might be accepted for the other wives of the father and the same term of address might be used. Here we have an extension of the term "mother," with its deep emotional connotation, to a person who is not tied by the strong physical and emotional bond to the self but who is so bound to

* Reference has already been made to the difference in our treatment of this subject, owing so far as I can see to a difference in the evaluation of descent.

† Here I entirely agree with Malinowski. *See also* Lowie, *Primitive Society* (1920).

some of the other children in the family group, and stands in the same relationship to the father as the real mother does. The wife of the father is thus not a mother surrogate but an "other mother," accepted as such, during childhood. If this situation is granted, and there is no doubt of its existence in the polygynous family common in savage society to-day, then a reasonable psychological step is made towards the solution of a sociological situation so strange that it has probably aroused more discussion than any other in anthropology, *i.e.* the classificatory system of nomenclature, by which all the women of one large social group are called "mother" and all the men of another group "father." One might have supposed that the unique mother-child situation would have been represented by a word that could have described no other situation. On the contrary, the word "mother" is easily used in common speech for many other concepts, apparently because of its extremely personal yet universal meaning, *e.g.* mother-earth, mother-tongue, mother-church; matrix has even become a geological term. Thus, if there is no psychological difficulty in using the term "mother" for such conceptions as the above, it may be granted that the savage in using the term "mother" for the other wives of his father does not believe that he is related to them by a physical bond, but recognizes that these women have the same status as his own mother.

The most straightforward extension of the parent-child relationship is to the mother's sisters on the one hand and to the father's brothers on the other. Although there seems much in favour of the development of clan organization, and synchronously the classificatory system, on a matrilocal basis, as we have no evidence of the priority of either type, it is here supposed that the extension of the family may have been on either a matrilocal or a patrilocal basis, or even that the local basis may not at first have been stable. As has already been pointed out, the word "mother" may be used without implying a true physiological bond, for the other wives of the father may be addressed as "mother"; there is no difficulty in understanding the extension of this term to the sisters of the mother, nor the extension of the term "father" to the husband of the mother's sisters, in a group associated on a matrilocal basis. The other wives of the father may, of course, be the sisters of the mother, but there seems no need to suppose that originally a man who married one woman had a right to marry all her sisters, although this type of organization does exist. All that it is necessary to grant is that children of different mothers and one father brought up together may call all the wives "mother." Then, in a similar way, the children of more than one man, brought up in close proximity, whose mothers, being sisters, have not left their parental group, may do the same thing, and call all the mothers in the group "mother." It makes no difference to the children if these mothers of their companions are the wives of one man or more, nor indeed if they are true sisters or not. With patrilocal organization, where the brothers tend to live together when married, the extension of the term "father" to the father's brothers and "mother" to their wives may have happened

very easily: there is no need to assume that a man necessarily had the right of access to his brother's wife, nor was bound to marry his widow, though these customs are common where the classificatory system is found and would undoubtedly aid in the extension of the term "father." This extension of the terms "father" and "mother" to a large group of persons, and the terms "brother" and "sister" to the children of these "fathers" and "mothers," is the chief feature of the classificatory system. Where this system is found—as, for example, in a typical clan (unilateral) exogamous organization—the child learns to use the same terms, and carry on the same general pattern of behaviour, to the brothers of his father and to the sisters of his mother, whether descent be traced in the male or the female line. This acceptance of classificatory nomenclature for the parents—that is to say, addressing the father's classificatory "brothers" as "father" and the mother's classificatory "sisters" as "mother"—carries with it the extended conception of the parent-child type of incest. The extension goes further than this—the wives of the "fathers" also become classed as "mothers," and the husbands of the "mothers" as "fathers," so that in an exogamous society where there is no dual organization there will be a conventional incest barrier between a very large number of persons of the opposite sex, belonging to an indefinite number of clans, separated from one another by one generation. In the clans of the two parents, besides those persons in the ascending generation who are debarred from the ego by the incest barrier and called "parents," are other related persons who are not so debarred and are addressed by special terms; these are the brothers of the mother and the sisters of the father. The behaviour towards the mother's brothers and father's sisters for both sexes is regulated by custom, and is not usually confused with that towards the parents.*

Where there is a dual organization of the clans, half the ascending generation of the opposite sex stand in the relationship of parent and the other half of spouse to the mother's brother or the father's sister. The attitude to the latter half is regulated by the specific marriage regulations of the society.

In the clan as it exists at the present day real relationship cannot be traced between all its members, but the classificatory system of relationship makes this unnecessary—clan brotherhood is an accepted convention, and from it all other relationships within the clan can be reckoned, including that of parent and child as well as the more distant types.

This clan conception of relationship is no empty convention, as is demonstrated in all clan ceremonial. It is not founded on any fiction of physical relationship between clan parent and clan child, but as the wives and their offspring are grouped together into one polygamous family, and the other wives of the father take up the

* It is well known that in some kinship systems, notably those of Polynesia, the same term is used for mother's brother and father and for father's sister and mother. This fact has been discussed at great length by all writers on the classificatory system.

status of mothers, so do certain other persons take up the status of fathers and mothers. On the theory put forward here, the classificatory system of relationship and the clan system are supposed to have evolved together, *i.e.* the classificatory system of relationship is one of the factors that have built up the clan ; other important factors are common tradition and beliefs. Though clan organization is dependent on the classificatory system, the two are not coextensive because clan organization is unilateral and therefore cuts across the classificatory system. In other words, the classificatory system admits as brothers and sisters persons who belong to different clans and are not clan brothers. This will be seen clearly when the relationship to the cousins is analysed. This fact has been a considerable stumbling-block to theorists, and led Rivers to suggest that all clan organization must be founded on a dual organization. On the present theory it presents no difficulty, and there is no need to hypothesize a world-wide dual organization, for the classificatory system is seen to be the extension of terms and status from persons who stand in a real relationship to the ego within the family to others who stand in certain other relationships to the latter. The extension follows a family (not a clan) basis and so is bilateral in contra-distinction to the unilateral clan. The classificatory system is not dependent on descent—yet clan organization *must* be so.

The importance of the family group cannot be over-emphasized ; in carrying over the terms used within the small family group to the larger clan group that organization undoubtedly gained in stability—the "clan" parent thus gained the status of senior due to the real parent. The social value of the clan in those societies where it exists cannot be doubted ; the value of the extended form of incest taboo that goes with it can only be weighed when we have considered the patterns that it assumes in several different forms of society. For this purpose some of the chief types of social organization associated with the classificatory system, including exogamous clan organization and the dual organization will be considered, and four actual forms of class systems.

The Brother-sister Relationship ("first cousins" in the classificatory system).

The Table (p. 267) shows the relationship of the ego to the "first cousins," *i.e.* the direct descendants in the second generation from two couples. In the classificatory system of relationship both types of parallel cousins are classed with the brothers and sisters, and in the behaviour to them we see the simplest extension of the brother-sister type of incest law. This extension of the incest law is not exogamy, because one of the two types of parallel cousins who are treated as brothers and sisters belong to a different clan from the ego. It is quite clear that this terminology is based on the family pattern, that is to say, it works bilaterally, yet this relationship is typical of the clan, in which descent is reckoned on one side of the family only. This extension of the incest law is of course consistent with a simple dual organization in which the group of the fathers can only marry into the group of the mothers and with an

organization in which both the levirate and sororate are habitual. And for this reason these institutions have been considered as necessary steps in the evolution of the classificatory system respectively by Rivers and Frazer.* But it must be noted that the inclusion of both the paternal and maternal parallel cousins under the terms for brother and sister, together with the acceptance of the extended conception of incest that goes with these terms, is common among people who have clan organization but no dual organization and among whom the levirate and sororate (though not impossible) are not habitual. The child in such a community where clan descent is unilateral can only learn the necessary pattern of behaviour due to the parallel cousins by carrying on the pattern that has already been formed, as the result of emotional reactions and traditional teaching, towards his own brothers and sisters. It is unlikely that he has grown up in close proximity to both types of parallel cousins. With patrilocal residence he may be more familiar with his paternal parallel cousins, with matrilocal residence with his maternal parallel cousins. In ither case this behaviour pattern will have in part to be learnt consciously.† The terms used will be his guide, and he will naturally form his conscious ideas of his parallel cousins on the pattern of his unconscious image of his brothers and sisters.‡ That is to say, he will use a *family* not a clan pattern on which to base his behaviour. It is far more reasonable to postulate this, and thus to suppose that the behaviour of man and the words that he uses to express that behaviour should be based on the facts of everyday life than that they should be due to an inherited memory (survival) of a custom long discarded. Thus the theory (or even fact) that in the remote past his tribe had been organized on a dual basis or practised any form of group-marriage could not influence the child at all, while the behaviour of his own brothers and half-brothers must do so. Whatever theory of the origin of the classificatory system may be held, it must be seen that the extension of the incest taboo from the brothers and sisters to the parallel cousins, and the cousin terminology itself, is not formed on the clan system but on a family pattern, though in it cohesion to groups larger than the family is inherent. Matrilocal or patrilocal residence and matrilineal or patrilineal descent may influence a man's closer relations with his parallel cousins, but neither affect the taboo directly. Although the classificatory system treats both types

* Mr. W. E. Armstrong has worked out an elaborate logical scheme which would account for these facts more accurately than can be done either on Frazer's or Rivers' hypothesis. It starts, however, from a group (not a family) basis, so need not be considered here in detail. (*Rossell Id.*, Appendix III, Cambridge, 1928.)

† The behaviour to the ortho-cousins will in all probability be founded on that to the half-brother and sister in the polygynous family. This distinction is not of great importance to the classificatory system as a whole, but is important in that variety found especially in N.E. Africa, which is best termed the Descriptive System. Here the own half-brothers and sisters are differentiated according to whether they are children of the father or children of the mother, and the terminology for the parallel cousins follows this distinction.

‡ R. Lowie, *Primitive Society*, p. 29: "... the incest sentiment cannot be instinctive so far as first cousins are concerned, but must be conventional."

of parallel cousins as similar, clan organization shows a difference, for if descent is matrilineal, the mother's sister's children will belong to the clan of the ego and the father's brother's children will not (except in a dual organization). If, on the other hand, descent is patrilineal, the father's brother's children will be the clanfellows. The parallel cousins only who are clansmen are the ortho-cousins.*

The cross-cousins, on the contrary, have no prototype within the individual family. The attitude towards them may be influenced by several factors, but first among these is the recognized method of tracing descent. Whether clan descent is matrilineal or patrilineal the cross-cousins belong to a different clan and they are not addressed by the terms that are used for brother and sister. The treatment of first parallel cousins in the classificatory system is thus founded on the behaviour pattern to the brothers and sisters. The incest taboo is extended bilaterally to form a prohibition against marriage with both types of parallel cousin. The cross-cousins, on the other hand, stand outside the group that we have considered—the primitive family group. The importance of this relationship to them (and it should be noted that there are two types of cross-cousins) is stressed once descent is stabilized. It is therefore essentially a relationship associated with clan organization, and as is well known the cross-cousin is usually the most acceptable mate.

EXOGAMY.

It is here necessary to define exogamy. This is an extension of the idea of brother-sister incest to a prohibition of marriage within the clan *along the line of descent recognized as legal*, and is essentially unilateral. Thus, where there is a simple dual organization the taboo on both parallel cousins is coextensive with exogamy. This is not the case where there is no dual organization, *i.e.* with patrilineal descent and clan exogamy a man does not usually marry his own real maternal parallel cousins, but he would not keep account of the children of his mother's classificatory sisters who might belong to any clan. On the other hand his ortho-cousins (*i.e.* paternal parallel cousins with patrilineal descent), real or classificatory, would always be unmarriageable on the ruling of exogamy.

Exogamy places the cross-cousins in a special position, outside the clan organization but related by close ties. In many societies where exogamy prevails the cross-cousins are the favoured potential spouses.

ENDOGAMY.

Before examining the chief exogamous forms of social organization, it must be pointed out that according to the principles demonstrated in this paper endogamy

* B. Z. Seligman, "Studies in Semitic Kinship," *Bulletin of the School of Oriental Studies*, vol. iii, parts 1 and 2, 1923, 1924.

presents no anomaly in social structure. Endogamy may be organized or unorganized. Unorganized endogamy is the permission to marry within the group, and may be due to the lack of any rules enforcing exogamy. Two types of unorganized endogamy can be recognized :—

(1) That found among peoples of a lowly culture who show no trace of the classificatory system but among whom family organization and the prohibition of incest within the family is found. The Andaman islanders are an example of such a culture. Professor Radcliffe-Brown was unable to find any trace of the classificatory system, and marriage with any type of first cousin is allowed. Local grouping seemed to be the basis of their social organization. It may then be hazarded that the Andaman islanders have never possessed clan organization, and that the incest barrier had never been extended beyond the family group.

(2) On the other hand, endogamy may be found among advanced people ; (*a*) where a clan organization known to have existed has broken down, (*b*) among people for whom a similar process can be inferred.

(*a*) In Africa the introduction of Islam carries with it patrilineal descent and very commonly marriage with the ortho-cousin.* Numerous examples of pagan tribes who are known to have been exogamous in the past and to have given up their exogamous organization on conversion could be quoted. Contact with white culture also tends to break up tribal and clan organization, and with the introduction of Christianity marriage prohibitions break down.

(*b*) In the Semitic and the Indo-European cultures there are indications of a previous classificatory system. Further, the Christian prohibitions to marriage show influence of some social organization larger than the family, and the prohibitions are carried beyond the family group.

Organized endogamy is based on the rule that makes it compulsory for a man to marry within his own group.† The caste system of India is the most generally recognized example, but endogamy exists in other societies. No complete understanding of organized endogamy can be arrived at without an examination of the kinship system with which it is associated. In a similar category to organized endogamy is the privilege to form incestuous unions ; this is usually associated with rank, and usually only granted to the highest rank.

* B. Z. Seligman, "Studies in Semitic Kinship," *Bulletin of the School of Oriental Studies*, vol. iii, parts 1 and 2, 1923, 1924.

† According to R. Lowie this is the only correct definition of endogamy (*Primitive Society*, p. 16).

MOTHER-IN-LAW TABOO.

It is suggested that two regulations very common (though not universal) in savage society are closely connected with the parent-child idea of incest :—

(1) Two men who stand to one another in the relationship of father to son may not marry the same woman. Thus a man may not marry his father's wife or widow. It is clear here that the primary incest barrier prevents a man from having intercourse with his own mother, and the extension of the mother relationship to the wives of his father is simple, and, as has been stated before, would have social advantages making for the solidarity of the polygynous family. This marriage is usually forbidden with matrilineal organization : there are, however, large areas where it is permitted; it is common in Africa among patrilineal cattle-owning peoples, and associated with a bride-price in cattle. Those people who do not practise this form of marriage regard it with undisguised contempt as incestuous.*

(2) Two women who stand in the relationship of mother and daughter cannot marry the same man. The extended idea of parent-child incest is not so obvious in this analogous condition, except in the case of a man marrying first into the elder generation ; then it seems simple that his wife's daughter might regard him as a father and extend the father incest barrier to him, which he would also recognize for his wife's daughter. The widespread custom of avoidance associated with this rule, however, is mainly directed between a man and a woman of the elder generation, i.e. *the mother-in-law avoidance,* so that the extended incest barrier that is emphasized in this custom appears to be that existing between a man and his mother. This is the view that has been taken by some of the best known writers on the subject—Frazer, Durkheim and Mauss—and also by psycho-analysts such as Freud and Róheim.

There is, however, great difficulty in accepting the view that mother-in-law avoidance is directly due to the extreme horror of the idea of incest between mother and son and extended to the mother-in-law, as suggested by Frazer, even with Freud's explanation that in avoidance between persons related by marriage " the incest would be a phantasy temptation brought about by unconscious intermediary links,"† when the rarity of avoidance between mother and son is compared with the widespread custom of mother-in-law avoidance. The avoidance of the mother-in-law, however, does seem to be linked to the parent-child type of incest, by the fact that it prevents the possibility of intercourse by *one person with two others who stand*

* B. Z. Seligman, " Asymmetry in Descent, with special Reference to Pentecost," *J.R.A.I.*, vol. lviii, 1928.

† Freud, *Totem and Taboo*, pp. 15–29.

*to one another in the parent-child relationship.** When this fact is coupled to the abundant evidence that there is for the right to marry certain relatives being transferred from the mother to the daughter, and the widespread custom of infant betrothal for girls, the mother-in-law taboo ceases to be an isolated and strange phenomenon and becomes linked with the other regulations that safeguard the solidarity of the family.†

The emotional relationship to the mother-in-law is traditionally difficult; in savage society emphasis is always laid on the respect due to the mother-in-law, and there are usually numerous mutual duties between son-in-law and mother-in-law. It is noteworthy that the relationship between a woman and her father-in-law, although also one of respect, is not bound by so many conventions and duties.

On the social side the behaviour towards the mother-in-law is again not isolated, other members of the family of the spouse are treated in a similar way in different degrees (and the avoidance between persons of the same sex cannot be ignored). Explanation of the behaviour towards these relatives by marriage on the lines of the extended idea of incest would be fantastic and no guide towards the understanding of social organization. It is not, however, necessary to seek a single cause in a custom of this type.‡ If, however, we can see that the reaction towards the mother-in-law may arise from the idea of incest of the parent-child type, it is not difficult to suppose that any conventional form of behaviour that could act as a safeguard from this (supposed or real) danger might still be influenced and shaped by other social forces, which would also affect other relatives by marriage with whom there could be no incest connotation.

THE CLASS SYSTEM.

Some idea of the working of the classificatory system was seen from the examination of the relationship to the first cousins. But before any attempt can be made to understand the more complicated marriage prohibitions associated with formation of the so-called marriage classes, the relationship of the ego to the second cousins must be taken into consideration. Here a digression must be made concerning the theory of class systems.

All those theories that see the development of social organization from a larger group than the family postulate some kind of class system as its basis.§

* For transference of rights from mother to daughter: Melanesia, *see* Rivers, *History of Melanesian Society*; Africa, *see* B. Z. Seligman, "Marital Gerontocracy in Africa," *J.R.A.I.*, vol. liv, 1924; America, *see* Gifford, University of California Publications in *Am. Arch. and Eth.*, vol. 12, 1916.

† For recognized exceptions to this rule in all its four forms, *see* f.n., p. 270.

‡ G. Mauss, "Parentés à Plaisanteries," *École pratique des Hautes Études, Section des Sciences Religieuses, Annuaire* 1927–1928 (Melun), p. 15.

§ The theory of Durkheim and Mauss is founded on a basis of classes due to differences in generations, that of Rivers rests on a two-class basis or dual organization, etc.

In a paper on the Ambrym six-class system* I showed how these as well as the Australian eight classes (or any system which could be considered to belong to Professor Radcliffe-Brown's Type II) could be derived from a classificatory system by means of the recognition of bilateral descent, and further demonstrated that the class nomenclature was simply the classificatory system carried on logically on a bilateral basis and by that means reducing relationship to an absurdity. This system of nomenclature may group together in one class persons as incongruous as the mother and the son's wife, yet it never obliterates the true meaning of these relations in the individual family. The recognition of bilateral descent destroys clan organization if both the paternal and maternal lines have equal importance, but if one type is dominant to the other it gives an alternation of generations in both lines and splits the clan into classes or sections. Just as a man and his father cannot belong to the same group (clan) with matrilineal descent, or a man and his mother with patrilineal descent, so with the simplest form of bilateral descent he belongs to neither group (marriage class). With patrilineal dominance he belongs to the class of his father's father and with matrilineal dominance to that of his mother's mother.

It is, however, legitimate to consider a dual organization with unilateral descent as a class system: as has been repeatedly demonstrated certain features of the classificatory system are typical of a dual organization, but it has been suggested that they could have come about without any dual organization. Other features such as the classing of the father's sister with the mother's brother's wife or the mother's brother with the father's sister's husband, seem to be directly dependent on dual organization, or the exchange of sisters for wives, which it practised habitually may be regarded as a dual organization. Thus, if we regard the dual organization as a class system, we see in it a certain grouping together of relationships already based on a classificatory system, and these are grouped again on a unilateral basis. This point must be borne in mind when considering the Australian systems, which allow cross-cousin marriage and yet divide society into four classes. This is Professor Radcliffe-Brown's Type I. It is far more convenient to call this organization Type I than a four-class system, for, as Professor Radcliffe-Brown points out, the marriage type is independent of the number of named classes, and Type II is frequently found with a so-called four-class system.†

* "Bilateral Descent and the Formation of Marriage Classes," *J.R.A.I.*, vol. lvii, 1927.

† "Meanwhile it may be worth while to point out one important fact which is often overlooked by writers anxious to expound theories, that is, that the marriage laws of Australian tribes are not in any way whatever affected by the existence in the tribe of two or four named divisions. Amongst tribes with two named divisions, we find Type I in the Urabunna tribe and Type II in the Dieri, Wathi-wathi and Chaap-wuurong tribes. Amongst tribes with four named divisions we find Type I in the Kariera and other tribes, and Type II in the Mardudhunera, Luritcha and Pitta-pitta tribes, and probably in most of the tribes of New South Wales. We also find Type II in such a tribe as the Narrinyeri, which has no named divisions. Finally, even the existence of eight named divisions is not a feature on which we can lay much stress in classifying Australian tribes. It is true that wherever there are eight sub-classes the marriage must be of

The peculiar feature of classes which have come about by the recognition of bilateral descent is the separation of contiguous generations into separate classes. This does not occur in the dual organization, where with matrilineal descent the mother and mother's brother belong to the same social group as the ego.

The Arunta organization may be regarded as typical of the simplest form of class system (unless the dual organization be regarded as a class system). The terminology and the typical marriage with the mother's mother's brother's daughter's daughter is that called by Professor Radcliffe-Brown Type II :—

> "In systems of Type II, mother's mother's brother and father's father are distinguished from one another, and so also are father's mother's brother and mother's father. In completely developed varieties of Type II this leads to the recognition of four lines of descent, those, namely, from father's father, mother's mother's brother, mother's father, and father's mother's brother, if we reckon through males, or those from mother's mother, father's father's sister, father's mother, and mother's father's sister, if we reckon through females. An example of Type II is the system of the Aranda tribe."*

This seems to be another way of saying that the system is founded on the recognition of bilateral descent, although Professor Radcliffe-Brown records direct patrilineal clan descent in this type. It should be noted that Type II is far more widely spread in Australia than Type I which allows the marriage of cross-cousins. The cross-cousin marriage of Type I would present no difficulty in our scheme if it be regarded as dependent on unilateral (either matrilineal or patrilineal) descent, but as it is associated with a system which separates contiguous generations it must be given separate consideration.

Asymmetrical descent is a method in which the two sexes count descent differently. There may be matrilineal or patrilineal dominance: either can result in the formation of classes, though on account of the asymmetry the classes have not the same characteristics as classes brought about by bilateral descent. Thus asymmetrical descent does not separate contiguous generations or group together

Type II, but exactly the same marriage-rule, and an exactly similar system of relationship, may be found in tribes in which the eight sub-classes are not named. The fact that a tribe has two or four name divisions tells us nothing whatever about the marriage law of the tribe, which can only be ascertained by a careful study of the system of relationship.

"It may also be worth while to note, in connection with the theory that the prohibition of the marriage of first cousins (and the origin of the relationship system of Type II) is due to the change from maternal to paternal descent of the totem, that in the Kariera tribe, Type I (with the marriage of first cousins) exists together with paternal descent of the totem, and that in many tribes of New South Wales and Victoria, Type II exists together with maternal descent of the totem. The theory is, therefore, not supported by the facts" (A. R. Brown, "Three Tribes of Western Australia," *J.R.A.I.*, vol. xliii, 1913, pp. 192–4.)

* A. R. Brown, "Notes on the Social Organization of Australian Tribes," *J.R.A.I.*, vol. xlviii, 1918, p. 224.

alternate generations. In the dominant line the succeeding generations belong to the same group as they would with unilateral descent, but in the submerged line the groups follow one another in some definite numerical succession.*

The Brother-sister Relationship in the Classificatory and "Class" Systems. The Second Cousins.

When second cousins are considered, that is to say, when relationship is traced to the contemporary generation by direct descent for three generations from two couples, or the collateral descendants as well as direct descendants are traced for two generations, it will be found that there are sixteen types of cousins (*see* Table, p. 267). If marriage were regulated by exogamy, and exogamy be considered as a device to prevent marriage within the clan, it should be possible to marry any type of cousin who is not a clansfellow. In practice the marriage of second cousins is never so simple as that; it is therefore necessary to consider the position of the second cousin in detail.

It is obvious that should behaviour towards all these relatives be separately regulated by tradition, such behaviour can have no basicly emotional foundation, but must be regulated by some well-recognized law resulting in an entirely conventional attitude. Of these sixteen types of second cousin, in a society where there is clan organization and exogamy but no rules compelling the marriage of relatives, only one type will stand in a definite known relationship—the ortho-cousin, with whom marriage will be considered incestuous. Where patrilineal descent is recognized this is the father's father's brother's son's child, and with matrilineal descent the mother's mother's sister's daughter's child. In a dual organization both parallel cousins are ortho-cousins.

The marriage regulations for the second cousins in a dual organization call for no remark. Marriage is only prohibited to those cousins who rank as ortho-cousins and would be addressed as such. But in a patrilineal or matrilineal exogamous clan organization exogamy rarely, if ever, appears to be the only regulation; the parallel cousins who are not ortho-cousins, that is to say, those who belong to clans different from ego, are usually regarded as brother and sister and may not be married. When we come to the marriage of second cousins among those peoples who recognize a class system we find a far more complicated condition. Where marriage with any type of relation is habitual the resulting types of second cousin become consequently reduced from the sixteen existing types. In the class systems based on indirect (or bilateral) descent the second cousins fall definitely into marriageable or non-marriageable classes, *according to the recognized form of descent*. In the Table the sixteen types of second cousin are shown, and the possible marriages in the

* B. Z. Seligman, "Asymmetry in Descent, with special Reference to Pentecost," *J.R.A.I.*, vol. lviii, 1928.

contemporary generation can be seen for a matrilineal exogamous society, a patrilineal exogamous society, in a dual organization, and for the class systems of Ambrym, Pentecost, and the Arunta.

In Ambrym.

For an Ambrym Islander, among whom A2 marries B2, the sixteen second cousins fall into six groups :—

(1) In his own group, A2, fall the father's father's brother's son's children and the mother's mother's sister's daughter's children, the father's mother's sister's son's children and the mother's father's brother's daughter's children, because, with the dual organization (or other class system), if a man marries into one group then his brother must marry into the same group, and (except where complicated by asymmetry as in Pentecost) his sister also marries into the group into which he married. Thus, four types of cousins become ortho-cousins.

(2) The mother's mother's brother's daughter's children and the mother's father's sister's daughter's children belong to the same group as his own son (and his father), A1, because of the marriage with the cross-cousin of the mother.

(3) The father's mother's brother's daughter's children and the father's father's sister's daughter's children belong to the same group as the mother, C1, because of the marriage with the daughter of the father's cross-cousin.

(4) The father's mother's sister's daughter's children, the father's father's brother's daughter's children, the mother's mother's sister's son's children, and the mother's father's brother's son's children, belong to the group of the mother's father, C2, because of the marriage of a woman with the cross-cousin of her mother.

(5) The mother's mother's brother's son's children and the mother's father's sister's son's children belong to the group of the mother's mother.

(6) The father's mother's brother's son's children and the father's father's sister's son's children are classed with the wife, B2, and are the *only marriageable second cousins.*

In Pentecost.

In the Pentecost asymmetrical grouping,* although society is divided into six groups, only five are represented among the second cousins. To bring in the sixth group relationship must be traced to third cousins. There are four types of marriageable second cousins—A marries d—the daughters of the father's mother's brother's sons, the daughter's of the mother's mother's sister's sons, the daughters of the mother's mother's brother's daughters and the daughters of the mother's father's brother's sons. However, none of these women in the correct marriage class

* B. Z. Seligman, "Asymmetry in Descent, with Special Reference to Pentecost," *J.R.A.I.*, vol. lviii, 1928.

can be married if a marriage has already been contracted either with her mother or her daughter. It must be remembered that the marriage-rules are different for men and women, and the women of group A marry four different types of second cousin, marked (F).

The Arunta.

Among the Arunta four types of second cousin belong to a man's own group, and are his ortho-cousins and addressed as brothers and sisters. Four other types of cousin belong to the group of his mother's mother, and are addressed by that term. Four more types belong to the group of the cross-cousin and are addressed by that term. The remaining four types of second cousin belong to the marriageable group, Panunga, for Purula men and women.* We are accustomed to think of the Australian eight-class system (Professor A. Radcliffe-Brown's Type II) as allowing marriage with the mother's mother's brother's daughter's daughter relationship only, but as a couple of brother and sister marries a couple of sister and brother, marriage with the mother's father's sister's daughter's daughter is also implied when the first type is mentioned. The direct working of the dual organization allows the marriage of another pair of second cousins. Just as in a unilateral system on a dual basis the marriage with the mother's brother's daughter also implies that with the father's sister's daughter, so in a bilateral system on a dual basis among the second cousins (*i.e.* descendants from two couples one generation further removed than the first cousins) two pairs of marriages are allowed. The marriage with the father's father's sister's son's daughter is complementary to that with the mother's mother's brother's daughter's daughter, just as that with the father's sister's daughter is complementary to the mother's brother's daughter marriage, and marriage with the father's mother's brother's son's daughter is implied when the former is allowed, because of the exchange of sisters for wives.

According to Sir James Frazer the organization of the Australian tribe is intended to prevent the inter-marriage of certain social groups (such marriage being considered specially abhorrent) and this intention, he states, it adequately effects. Further, he considers the eight-class system was evolved from a more simple system *with this purpose*.† Spencer and Gillen state: "Its [the organization into eight classes] practical result—though, as far as we can tell, the native has no ideas in respect of this—is to prevent too close inbreeding and to bring about, in most cases, the mating of men and women belonging to different localities and different 'families.'"‡ Thus, Sir James Frazer supposes the formation of classes to have been a conscious

* Spencer and Gillen, *The Arunta* (London, 1927), vol. I, chap. 2.

† *Totemism and Exogamy*, 1910. The point of view of Durkheim and Mauss has not been considered in detail. But if the second cousins were considered separately, starting from the basis presented by that theory, it would still be hard to see anything but a fortuitous result in the marriage regulations relating to them.

‡ *The Arunta*, 1927, p. 49.

purposeful process, and Sir Baldwin Spencer considers the process to have been unconscious.

It may now be asked whether the regulation of marriage between second cousins can have been formed or evolved either consciously or unconsciously in order to avoid incest. How does the regulation of inter-marriage between the sixteen types of cousin confirm the above statements of Frazer and Spencer, and what reason can be suggested that could make the eight out of the sixteen abhorrent? Four of these abhorrent types belong to the group of the mother's mother, and also of the cross-cousin, four more to the group of the mother's father, while the four who may be married belong to the group of the father's mother. The abhorrence of the four which belong to the group of the ego can be understood on the extended idea of brother-sister incest. But no force can be suggested on this line of reasoning which could possibly separate the four marriageable cousins from the eight others. The regulation for the marriage of second cousins is equally inexplicable on these lines for Ambrym and Pentecost. If, on the other hand, we regard the marriage classes as *the result of a recognized method of tracing descent*, we can find a rule which works consistently for these three divergent systems.

Marriages in Pentecost, Ambrym, and among the Aranta.

A further examination of the possible marriages in these three societies is necessary to show what is the method recognized in each, and how, *given a recognized convention regarding descent*, the incest laws active within the family work in these societies. And it will be seen that the plan of extension of the ideas of incest that we have sketched works for all three systems as well as for clan exogamy.

It must be borne in mind that when bilateral descent is adopted it can be carried out logically only if clan organization breaks down, as in Eddystone Island, or where there are an indefinite number of intermarrying clans and no dual organization. But where there is a dual organization of the clans, then it must be limited by some convention, some readily accepted legal fiction, otherwise marriage within the tribe is not possible at all.

The fiction accepted, both on Ambrym and throughout Australia, is that a group is limited to one generation.* A detailed examination of the Ambrym system† showed that it was founded on a dual organization with matrilineal descent; definite evidence was shown for a change in the social system, after which descent was legally recognized in both lines and the marriage of the cross-cousins was forbidden. The Ambrym islanders then regard the cross-cousins as related to themselves as brother and sister, because of the recognition of bilateral descent; the children of the cross-cousins they regard as a fresh group, neither that of their father nor mother (and

* *See above.*

† B. Z. Seligman, "Bilateral Descent and the Formation of Marriage Classes."

hence of the mothers and fathers of the cross-cousins) nor of their own group. The idea of transference of marriage rights from one generation to another is simple and very common, so that when a man cannot marry his cross-cousin (in a society in which such marriages had previously been allowed) the daughter of the (f) cross-cousin becomes a suitable mate unless she falls into a group that cannot be married for some other reason. Having accepted the daughter of the cross-cousin as a mate, the cross-cousin is seen to be unmarriageable for two reasons: (1) by the recognition of bilateral descent she is forbidden because of the brother-sister idea of incest;* (2) because a man cannot marry into two generations, the parent-child idea of incest (in the form of the mother-in-law taboo) places a second ban upon her.

Intermarriage of Second Cousins in Ambrym.†

An Ambrym islander belonging to group A2 marries into the group of the daughter of his (f) cross-cousin, B2. Only two out of the sixteen types of second cousin fall into the marriageable group B2 (*see* Table, p. 267).

Four types of second cousins are ortho-cousins, because of the dual organization and matrilineal descent. The remaining ten types of cousin cannot be married; they fall into the groups B1 and A1, C1 and C2. The Table shows the relationship of these groups to A2. No conceivable idea of incest places these relationships upon a different footing from those of group B2 (although this law regulates the behaviour of the four types of ortho-cousin and puts them all in the same category as the self).

The recognition of bilateral descent and the acceptance of the convention that a group is limited to one generation allows the marriage with the daughter of the cross-cousin. Once this marriage is allowed (*i.e.* between one member of the first descending generation and one member of the second descending generation) descendants in the second generation from it must fall into the groups shown in the Table, and because of the bilateral descent (or rule that a man cannot marry into the groups of either parent) only two of the sixteen cousins can be married. Thus the recognition of bilateral descent is the simple rule underlying the complicated regulations found in Ambrym.‡

Intermarriage of Second Cousins in Pentecost.

The four types of cousin whom a man can marry and the four whom a woman can marry are shown in the Table. Here again no conceivable reading of the incest

* With unilateral descent the cross-cousin can be married whether descent is matrilineal or patrilineal, but when bilateral descent is recognized, the cross-cousin must belong to the group of one parent, and as the groups of both parents are equally considered related, the cross-cousin cannot be married.

† It will be remembered that the typical Ambrym marriage is with the daughter of the (f) cross-cousin, *i.e.* with a first cousin once removed in our terminology.

‡ At Balap a man marries "a woman of his father's mother's line . . . [who is also] a woman of his mother's mother's 'tribe' [*bwelim*] but not her line in that tribe," while at Ranon "a man always marries into a certain *bwelim*, his mother's mother's, but a woman in that *bwelim* who is not of his own *batatun* [moiety]." (Deacon, *op. cit.*, p. 333.)

laws can account for the differentiation of these groups, nor of these eight marriageable groups from four of the other non-marriageable groups.

However, by means of the dual organization and matrilineal descent which are features of both the Ambrym and the Pentecost systems, four non-marriageable types are the ortho-cousins, and these are naturally the same for Pentecost as for Ambrym.

It has been shown how the acceptance of asymmetrical descent (bilateral for men and matrilineal for women) divides a society already organized on a dual basis into six groups, only one of which is marriageable. The Table shows who among the second cousins fall into this group. It must be noted that in the Pentecost type of asymmetrical descent the women recognize matrilineal descent only: therefore a woman, her mother, and her daughter all belong to the same group. A man, on the other hand, recognizes bilateral descent, but matrilineal descent is dominant, so that a man, his father, and his son all belong to different groups. Hence, although society is divided into six groups, there is no conventional law which limits a group to one generation. This, however, causes no confusion. The law which prevents a man from marrying into two generations (which we have considered to be derived from the parent-child law of incest) operates in the asymmetrical group just as it does in the unilateral clan, and a man cannot marry a woman if he has already married her mother or her daughter. In Pentecost marriage with the mother's brother's widow is allowed, therefore, that with her daughter, the cross-cousin, is not and she falls into the group of the daughter. It will be seen in the Table that two types of cousin, the father's mother's brother's daughter's children and the mother's father's sister's son's children, belong to the same group as the self (and the ortho-cousins): this does not occur in Ambrym or among the Arunta, it comes about only by means of the recognized (asymmetrical) method of tracing descent.

Thus, in Pentecost, as in Ambrym, laws of incest cannot directly account for the intermarriage laws among the second cousins. But when the conventional limitation to the groups brought about by the method of tracing descent is accepted, then it can be seen that the marriage prohibitions are extensions of the rules of incest within the family, dependent on the type of descent accepted, *i.e.* asymmetrical descent with matrilineal dominance.

Intermarriage of Second Cousins among the Arunta.

The direct working of the brother-sister type of incest may be seen in the prevention of marriage with those second cousins who fall into the group Purula. This is because matrilineal descent (and it must be recognized that bilateral or indirect descent does not exclude matrilineal descent and can be either matrilineal or patrilineal) and the dual organization bring all these four types of cousins into the ortho-cousin relationship. It is impossible to see any direct working of the incest

laws in the extension of the brother-sister incest law to the remaining eight types of cousin. Nor are matters made easier when we see that four classes into which the second cousins, marriageable and non-marriageable, fall correspond with the classes of the four grandparents, while the classes of the sixteen cousins of the parents are entirely unrepresented among the second cousins.

If, however, we accept the theory that the eight-class system (or system of Type II) is founded on the recognition of *bilateral descent*,* no explanation of this grouping of the cousins is required. The grouping is the direct result of the method of tracing descent, coupled with the acceptance of the important conventional limitation already mentioned that a group is limited to one generation. It has been seen that the bilateral method of tracing relationship is inconvenient: the descendants of the four grandparents and the eight great-grandparents become related. If this relationship is adhered to, *i.e.* the conventional limitation of the group to one generation is not accepted, then clan organization breaks down, for one cannot belong simultaneously to eight unilateral groups. An exogamous kindred group can be recognized as a result, whose boundaries can never be stable, but must be limited by the capacity of the groups to remember relationship.† Such a limitation, though elastic, must be an acceptable convention, because if marriages began to be permitted to any person to whom relationship could be traced, then in the next generation either endogamy must result, or else marrying within the tribe would become impossible.

The Australians have accepted a limitation of a more conventional type which allows the marriage of relatives. A man traces descent to his father's group and to his mother's group, but he has accepted the convention that a group is limited to one generation. Thus he should be able to marry into any group except those of his father and mother. But, because a brother and sister marry a sister and brother, his wife's parents must not belong to the groups of his own parents. The prohibitions to marry into these four groups work on the extension of the parent-child behaviour pattern. Further, he cannot marry into the group of his child, and, as a brother and a sister marry a sister and a brother, he cannot marry into the group of his sister's child, and thus another two groups are forbidden to him by the extension of the parent-child type of incest, reckoned on bilateral lines. On the simple extension of the brother-sister type of incest on the same lines as clan exogamy his own group (the seventh) is unmarriageable. Thus the marriage laws of the Arunta can be regarded as due to the fundamental incest laws, evolved within the family and carried over by the method of bilateral descent and the convention that descent in a group is limited to one generation, to a dual organization. It would make no difference to the system if this dual organization were regarded as matrilineal or patrilineal, because of the convention that a group is limited to one generation only.

* B. Z. Seligman, "Bilateral Descent and the Formation of Marriage Classes," *J.R.A.I.*, vol. lvii, 1927.

† *i.e.* the *taviti* of Eddystone Is. (Rivers, *Social Organization*).

Thus all the marriage prohibitions that we have considered, including those based on exogamy and those based on the various class systems, are seen to be founded on the *laws of incest within the family, carried over to larger groups and limited in each case by the method of tracing descent specifically recognized.*

The Organization of Type I, or the Four-class System.

In regarding the class systems as the result of the recognition of bilateral descent, I am aware that the so-called four-class system, which allows the marriage of cross-cousins (Professor Radcliffe-Brown's Type I) is not consistent with it. It must be noted that this is the only social organization that does not fit in with the principles expounded here—even endogamy presents no logical difficulty in the scheme. I suggested previously that "the four-class named systems of Australia might appear to be exceptions to this, because they allow the marriage of cross-cousins, which is incompatible with the idea of incest associated with bilateral descent. I think this need not upset the scheme, for here, by means of the use of named groups, indirect descent has so adequately replaced direct descent that, instead of both forms being recognized as bars to marriage, both forms are equally ignored in that capacity and are superseded by the classes."* Though this is possible, a more careful consideration of Professor Radcliffe-Brown's work on the Kariera of West Australia and an examination of the Table favour another possibility.†

According to Professor Radcliffe-Brown, the Kariera tribe is divided into "two couples of classes, Banaka-Palyeri and Karimera-Burung," each couple forms an exogamous patrilocal group as well as a patrilineal totemic group, and so he regards each couple of classes as a clan. The only difference that this organization offers to a dual organization is that the division of each clan into two places the children and the parents in different named classes. We must now inquire what is the result of this separation of generations? With exogamy and patrilineal descent marriage with the father's sister or the mother's brother's widow is impossible without any further division into generations.

If the division into generation classes be regarded as an exogamous device, the only persons whom it places in an exogamous division away from the ego are the mother and her sister. It is unnecessary to repeat all that has been said about incest to insist that this result can have come about without a special division into generation classes. What then is the function of the four-class system among the Kariera (or any society with four divisions that permits the marriage of cross-cousins)? ‡ A glance at the Table shows that the marriage regulations of the

* "Bilateral Descent and the Formation of Marriage Classes," *J.R.A.I.*, vol. lvii. 1927, p. 375.

† A. R. Brown, "Three Tribes of Western Australia," *J.R.A.I.*, vol. xliii. 1913.

‡ If Type I should be found to be more closely associated with matrilineal than patrilineal descent, it would function in preventing the marriage with the mother's brother's wife.

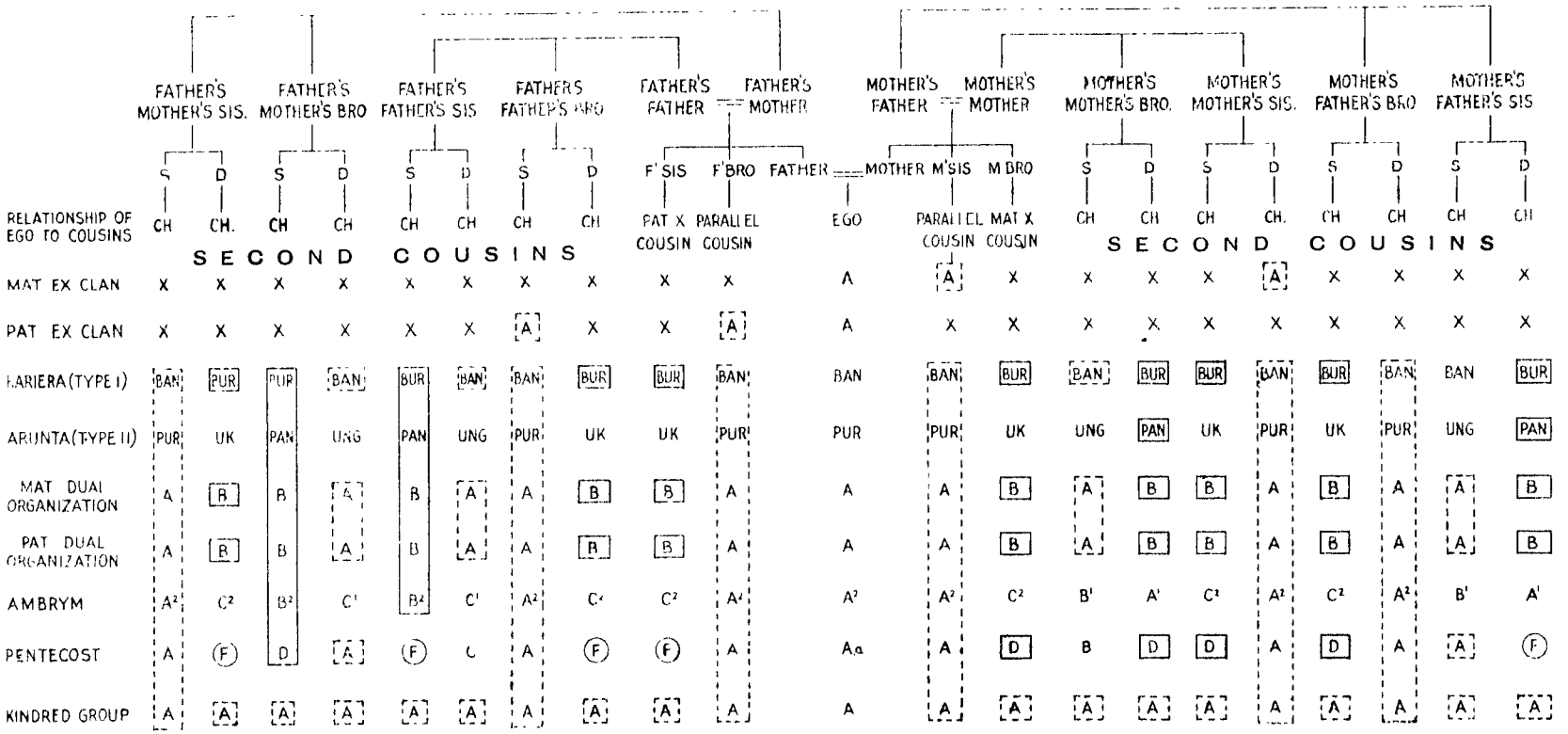


TABLE SHOWING THE POSSIBLE MARRIAGES AMONG THE 20 DIFFERENT COUSINS.

Letters or syllables enclosed by broken lines belong to the same social group as the ego, and are therefore unmarriageable.
Letters or syllables enclosed by unbroken lines belong to groups into which the ego can marry.
Letters or figures enclosed by circles belong to groups into which the ego (female) can marry in Pentecost. A (male) marries D, *a* (female) marries F

The following abbreviations are used:—

S = son. D = daughter. CH. = children. X = any unnamed group, not that of ego.
Ban, Bur, Pur, Uk, Ung, Pan, refer respectively to Banaka, Burung, Purula, Uknaria, Ungalla, Panunga.

Kariera differ in no way from a dual organization with *either* patrilineal or matrilineal descent as far as the marriage of cousins of the contemporary generation be concerned. Professor Radcliffe-Brown states that marriage is regulated by consanguinity; only a woman who stands in the relationship of *ñuba* can be married, and for a Banaka man all *ñuba* must be Burung; however, those Burung who are *kabali* and *tami* cannot be married. Among the second cousins, all those who fall in the class Burung are marriageable, because the *kabali* and *tami*, though of the same class, are separated from ego by two generations. Hence the four classes have no function in the regulation of marriage though the division into two groups is of great importance in this connection. Thus it seems difficult to accept the four classes as the result of bilateral descent, as bilateral descent prevents the marriage of cross-cousins and unilateral patrilineal descent seems to function completely among the Kariera.

According to Professor Radcliffe-Brown's sketch-distribution map, Type I is only found in two comparatively small areas. The Mardudhunera tribe have the same named four classes (differently arranged, however) as the Kariera, but with them the marriage of cross-cousins is forbidden; their social organization is that of Type II, similar to the Arunta and the great majority of Australian tribes whether divided into four or eight classes. It may then be suggested that the Kariera and other similar tribes who practice Type I marriage, though they may have four named divisions, are really organized on a unilateral dual-organization basis (and it makes no difference whether this is matrilineal or patrilineal), and have merely borrowed the four named classes from other tribes with whom they had come into contact who practise Type II marriage, and among whom the four classes are actually the result of bilateral descent.

CONCLUSIONS.

Before finally considering the value of the extended rules of incest to clan organization it will be well to sum up the conclusions we have reached so far from this study.

(1) *Incest.*—The study of the family has shown the tendency to rivalries that arise within it, which are inherently human. Such situations do not occur in the other branches of the animal kingdom, because the young mature more quickly and are physically capable of fending for themselves when they reach sexual maturity. The adoption of the incest law helps to preserve harmony within the family group over periods when these rivalries might otherwise become acute. The parent-child type is the fundamental incest law, but the brother-sister type is an auxiliary to it, and the two laws function together and may be regarded as having developed together. The main function of these laws is to keep distinct throughout life the parent-child relationship and the brother-sister relationship, and not to allow either to be changed to one which is entirely distinct in actual life (whatever may be the attitude of the unconscious), *i.e.* that of mate. It may here be mentioned that all

marriage ceremonies have value in that they accentuate the fact that marriage (the social form of mating) sets up a new relationship. The parent-child type of incest taboo may be defined from the sociological point of view as the *law which prevents one person from mating with two others who stand to one another in the relationship of parent and child.* The value of the parent-child relationship is seen in the stabilized behaviour pattern it preserves, shown as respect for the elder generation. The brother-sister type of incest does not produce such a distinct behaviour pattern. It would seem that in some societies the temptation to this form of incest is so great that the brother-sister relationship is only preserved by strict etiquette and avoidance, while in other societies these forms are not observed. The value of the brother-sister relationship (protected by this incest law) is the opportunity that it offers for the cultivation of comradeship and mutual aid. The value of both laws taken in conjunction with the group as a whole has been discussed above and must again be emphasized.

(2) *Descent.*—Emotional ties can hold two generations together and for a certain time perhaps three. But if larger groups are to have social cohesion then they must be bound by some formal tie, for the merely emotional ties may tend to split the group rather than to bind it. Such questions as the care of an aged grandparent or of a young grandchild (in case of its parent dying) may prove sources of trouble without some formal rule. *Descent* is the rule which decides to which side of the family a given person belongs socially. When groups larger than a family combine socially they must be bound by some common tie : the two simplest ties are those of descent and locality.* Descent binds persons who are related by blood (including persons adopted into the family), but such groups must have an artificial limitation. The convention accepted for the clan is *unilateral* relationship. It may be patrilineal or matrilineal. Compromises between the two principles are found.

Asymmetrical descent (bilateral for one sex, unilateral for the other) divides society into a definite number of intermarrying groups but does not separate contiguous generations into separate groups. Asymmetrical descent may have matrilineal or patrilineal dominance.

Bilateral descent may have matrilineal or patrilineal dominance, in either case it splits the clan organization into a number of intermarrying groups and separates the contiguous generations. Bilateral descent developed equally on the matrilineal and patrilineal sides breaks up the clan organization and produces a kindred group.

(3) *Marriage Regulations.—In all societies where relationship is reckoned beyond the family, descent regulates the prohibited degrees of relationship, and these follow the plan of incest within the family and are extended to classificatory relationship.* Thus, all

* It is noteworthy that the Andaman islanders, who have no clan organization and among whom the classificatory system has not been recorded, have local grouping. (A. R. Brown, *The Andaman Islanders*, p. 23, Cambridge, 1922.)

marriage laws are regulated primarily by prohibition and only secondarily for economic reasons by injunction. This rule works consistently for clan exogamy—matrilineal and patrilineal—in a dual organization, tri-clan system, and with the eight-class system and all those varieties of the six-class system that have been recorded.

While the extension of the laws of incest on the conventional lines of descent account for all these marriage laws, the primary incest law (which prevents the mating of parent and child), when seen as a law which prohibits intercourse between one person and two others who stand to one another in the parent-child relationship, accounts for the two other marriage regulations which are not themselves regulated by any plan of social organization and yet are widespread: (*a*) the law that forbids the marriage with both a woman and her daughter, which is associated with the well-known mother-in-law taboo: (*b*) the law that prevents a man from marrying his father's widows.*

(4) *The Classificatory System.*—The examination of the extension of the brother-sister incest law to marriage prohibition among first and second cousins showed that this followed the lines of the family, not the clan, and thus supports Malinowski's contention that the clan developed from the family. The classificatory system though associated with the unilateral clan is developed on the lines of the bilateral family, not that of the unilateral clan.

Within the primitive family itself we saw the first extension of a kinship term from its true relationship to someone else who held a similar status—we suggested that even in the primitive family the wives of the father might be called mother and treated as such.†

* Exceptions to both these laws exist; these exceptions are not sporadic but intimately connected with the social systems in which they are found. Among the Garos of Assam, for reasons of property, it may be necessary for a man to marry his wife's mother (*Totemism and Exogamy*, vol. ii, p. 253). It is a common practice among Californian Indians for a man to marry a woman and her daughter (Kroeber, "Californian Kinship System," University of California publications in *Am. Arch. and Eth.*, vol. xii, 1917, p. 362). Among the Navaho Indians marriage with a woman and her daughter is also allowed (Reichard, *Social Life of the Navajo Indians*, New York, 1928). In Africa, marriage with the father's widows is very common among the patrilineal tribes. These types of marriage, in which a person marries two others who stand to one another in the parent-child relationship, are in every case socially conditioned; they are not widespread, but each type has its own definite area and is associated with the type of inheritance practised (matrilineal or patrilineal), as well as the type of marriage (matrilocal or patrilocal). Further, I am indebted to Captain G. H. Pitt-Rivers for drawing my attention to the possibility of a fourth type of exception to this rule, viz., when the father marries his son's widow (as a form of levirate, *e.g.* Tamar in default of the brothers of her deceased husband turns to her father-in-law to raise up seed to the deceased). Also there are cases where co-habitation between a man and his son's wife is allowed: "... During the immaturity of the husband the wife is allowed to have sexual relations with the father of her child-husband or another near relation [S. India]" (Fehlinger, *Sexual Life of Primitive People*, Eng. trans., 1921, p. 16). Captain Pitt-Rivers considers that the same state of affairs exists in the Roro and Mekeo districts of Papua.

† Here we differ from Malinowski, who postulates primitive monogamy. There seem sound biological reasons in favour of polygamy wherever the food supply is not too precarious, but the argument cannot be developed here. (*See* Pitt-Rivers, *The Clash of Culture*, 1927, chap. viii.)

The extension of the relationship terms for parents to the brothers of the fathers and to the sisters of the mothers when brothers or sisters tended to dwell together in local groups is not difficult to see on the lines suggested by Malinowski. This view of the classificatory system makes it unnecessary to suppose a universal dual organization or sororate and levirate, for which there is insufficient evidence.

(5) *The Function and Value of the Clan.*—The clan organizes society on a wider basis than the family and makes possible the undertaking of larger and more daring enterprises than would be possible to men living in isolated family groups.

Malinowski has emphasized the importance of tradition in the family, but the primitive family will seldom hold together for more than two or three generations. Therefore the value of tradition to society organized solely on a family basis is limited. Clan organization by means of descent limited in a single line gives to tradition a far greater scope, and the value of this to civilization cannot be exaggerated.

(6) *The Value of Marriage Prohibitions.*—We are now in a position to make our concluding valuation, *i.e.* what use are all these marriage regulations, so prominent in savage society, to the community? We have seen the importance to the family of the laws against incest. Have the laws regulating marriage (the extended laws of incest) any corresponding value to the clan? At first it seems impossible to answer this question in the affirmative. There seems to be no psychological reason why marriage within the clan should in any way upset its unity: where endogamy exists the stability of the group is not impaired. The acceptance of the classificatory system of relationship carries with it the status of those relationships, not its emotional equation. Thus when a man uses the term "mother" or "sister" to some remote relative, or merely to a non-related clanswoman, he does not feel emotionally attached to her as he would to his own mother or sister; intercourse (or marriage) with her would not cause any upheaval in his social group. Nor can the value lie in mating couples who are unfamiliar with one another: on the contrary, these laws, based on a conventional idea of descent, frequently encourage marriages between people who are closely related. Nor could anyone seriously advance the view that it is biologically more sound to marry the cross-cousin than the ortho-cousin, or one particular type of second cousin in preference to another. There seems at first sight to be no reason why mankind should have accepted all these intricate prohibitions.

The advantages can only be seen when looked at from another angle. The value to society of both the family organization and of the clan organization, especially when acting simultaneously as they do among almost all savage peoples, cannot be doubted. The former is upheld by the incest laws, the latter by the adoption of a conventional limitation to descent outlined above. In the evolution of the clan the family pattern has been utilized, limited only by descent. The family

kinship terms and the status they represent have been carried over to the clan, and with it the family-behaviour pattern and its incest laws have been extended to the larger organization. For the internal relations of the clan itself, exogamy is of no special value, but the relationship pattern carried over from the family, which engenders the respect for the seniors, is of immense value. So where the clan exists, the extended prohibitions to marriage, based on incest and regulated by descent, persist. They are part of the price man pays for culture, but he frequently finds a way of turning even such restrictions to his advantage: he demands as a right those women who are not prohibited to him by law.

The Table on p. 267 shows the 16 types of second cousin and the four first cousins, arranged in columns, for all the main types of social organization :—

Clan exogamy, matrilineal.
,, ,, patrilineal.
Dual organization, matrilineal.
,, ,, patrilineal.
Kindred grouping.
The Ambrym six-class system.
The Pentecost six-class (asymmetrical) system.
The Arunta grouping (Type II).
The Kariera grouping (Type I).

It will be seen that the only correspondences in all these groups are those brought about by the dual organization, which indicates four types of cousin as ortho-cousin to whom the brother-sister behaviour is extended.

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THE AMERICAN INDIAN AS AN INVENTOR.

[With Plates XXIV–XXV.]

The Huxley Memorial Lecture for 1929.

By Erland Nordenskiöld.

In the following pages an attempt will be made to elucidate, by means of examples from America, one of the more—not to say one of the most—important problems of ethnographical science, viz., that of independent inventions and culture loans. As we all know, this is a much discussed problem, and the attitude taken towards it has mostly proved a matter of faith. [1] [1] To some researchers it is evidently placed beyond any doubt whatever that man exceedingly rarely, if ever, has made the same invention twice. When, for example, we meet with the signalling gong both in America and in the Old World, according to their view the Indians must have learnt its use from the latter, whilst to other investigators it appears quite natural that in different parts of the world the same invention has been made many times over.

Many students opine that a certain invention cannot have been made more than once because of its complicated and difficult nature, whilst regarding another as being so easy and simple that it might quite well have been accomplished at different times and places. This subjective view is, of course, capable of being varied in all possible ways. As a matter of fact, no doubt every open-minded investigator has his own particular opinion as regards primitive man's capacity as an inventor.

So as to get a real grasp of the above-mentioned controversy, I have in the following tried to review what we actually know in regard to independent inventions in America.

To that end I shall endeavour, so far as it is possible, by way of concrete instances to show how inventions have been made—or apparently have been made—by the Indians. My aim will be to avoid showing that personally I hold one view or the other, even in cases where I possess a subjective opinion—which I naturally cannot escape having. My object is to express nothing that is not purely objective. In my view it is better to be satisfied with small results that are sure than to propound wider ones that are uncertain. I do not wish to draw conclusions from facts before I know their true value. Thus I have purposely avoided expressing any definite opinion as regards questions concerning Melanesian, Polynesian, or

[1] References in this form are to the Bibliography at the end of this paper.

Asiatic influence in America. I have only attempted to adduce facts calculated to throw light upon the value of certain more or less theoretical speculations.

Generally speaking, it is on the question whether identical culture elements occurring in the New and the Old Worlds are explainable as independent inventions in two or more different places, or as culture loans, that the opinions of Americanists are so divergent. This is quite a mistaken limitation of the problem. Graebner [2] is certainly right when he remarks that those who believe the same invention to have been made at different times, are inconsistent when they hold that this can only have happened when the invention occurs in two areas separated from each other, whilst they consider that the invention has only been made once when it is a case of a connected area. For of course an invention may just as well have been made twice, although its area of distribution at the present time is a connected whole.

The same invention may, for instance, in one part of America be a culture loan from the Old World, whilst in some other part it is an independent invention, or an earlier loan from the Old World, but nevertheless the area of distribution may by now have become a connected whole. A cultural element of this kind is, for example, the skin-membrane drum which in large tracts of America is of pre-Columbian origin, whilst in other parts it has been introduced by whites and negroes.

Before proceeding any further, I wish to emphasize that a study like the one I am here placing before the reader ought to be valuable, inasmuch as it focusses our attention upon the collating of material from view-points that so far have not been sufficiently taken into account. For the study of culture loans and minor inventions, the influence of the whites, for example, on primitive tribes is of great importance. Objects originating from a primitive people, who no longer exist in their pristine condition, but have changed owing to influence from the whites, are, however, more or less at a discount with many collectors. For my own part I am prepared to confess that, for example, I have not always given due appreciation to such objects as the Indians have manufactured from old scrap-iron and such like, objects which nevertheless offer much that is interesting, seeing that they show how primitive man utilizes a raw material which is new to him. These products also tend to convey to us an idea as to his more or less marked conservatism.

I shall now proceed to discuss Indian inventions in some detail. It should be of interest, I think, to begin by pointing out what must have been invented and discovered by the Indians themselves, for the simple reason that it was unknown in the Old World prior to the discovery of America. By this we shall obtain a very fair picture of the Indians' capacity as discoverers and inventors. After that, we may well ask ourselves whether it is not possible that the Indians, who have discovered and invented so many things that were unknown among the variegated cultures of the Old World, might have been capable of hitting upon something or other that also was known there. It is a question that to me, at any rate, appears in a high degree pertinent.

In the first place, then, we may consider the cultivation of all the purely American cultivated plants. These the Indians must have found in their wild state, and by degrees brought under cultivation. These plants, as we know, are very numerous, and I shall confine myself to mentioning only the most important ones. They are, generally speaking, quite well known [3], but in this connection it is necessary that I should mention them, however briefly.

Of outstanding importance is maize. At the time when America was discovered this plant was being cultivated in a number of varieties all the way from Central Chile to 55° of northern latitude. A good many of the implements that were used in connection with the cultivation of maize, such as grinding-stones on three or four feet, graters, husking-pins, etc., must necessarily be Indian inventions. The different dishes prepared from maize must also be of Indian origin, as well as different methods of storing maize.

As I have already indicated, the cultivation of maize is of exceedingly wide range in America, and the Indians have found out how to adapt the method of cultivating this American plant according to the varying climatic conditions. Among other things, in Peru and in south-western North America, for example, there were in pre-Columbian times very large-scale irrigation constructions with an important canal system. As to whether the idea of these is native to America is a question that I for the present prefer to leave unanswered.

Next to maize, manioc is the most important of the cultivated plants of the New World. The Indians cultivate both a non-poisonous and a poisonous variety of manioc. In this case the Indians have made a very remarkable invention, in that they have discovered how to eliminate the deadly prussic acid from the manioc roots, and then use them for food. It thus follows that the Indians must have invented that most peculiar straining-bag of basketwork by means of which the poison is squeezed out, and also the various kinds of graters that are used for reducing the manioc to a pulp. (Fig. 1.) Of the former there are two varieties, and of the latter many different types. To these I shall recur.

Another very remarkable thing is also the Indian invention of utilizing the poison squeezed out of the manioc, for preserving meat against putrefaction in a tropical climate.

A plant very important to the Indians of the Andes in pre-Columbian time was —and still is—the potato. The Aymara Indians of Bolivia distinguish between no fewer than 240 different varieties of potato. The method of preserving potatoes by freezing and drying in the sun, for preparing so-called "chuño," must be an Indian invention.

Other important food plants that we have received from the Indians are our common beans, pea-nuts, Jerusalem artichoke, sunflower, as also cacao, quinua, tomatoes, etc. These and many others have been discovered by the Indians.

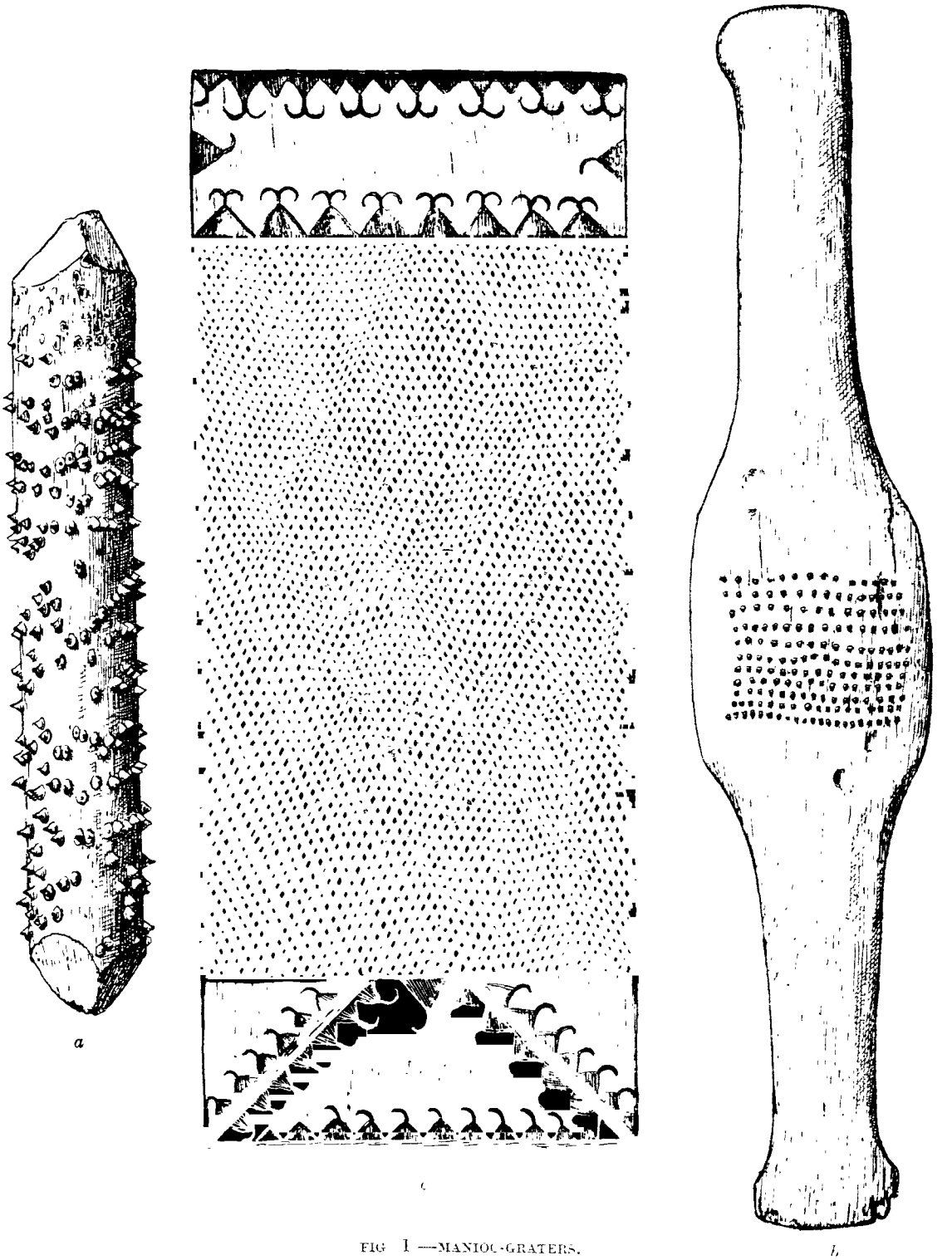


FIG. 1.—MANIOC-GRATERS.

a. CHOCOLO, BOLIVIA. ($\frac{1}{5}$) *b*. ASHLUSLAY, BOLIVIA. ($\frac{1}{8}$) *c*. PATAMONA, BRITISH GUIANA. ($\frac{1}{5}$)

The tobacco plant is one of the most well-known Indian discoveries, as well as smoking, snuff-taking, and chewing. Thus we see that snuff, cigarettes, cigars, pronged cigar-holders (Fig. 2), and tobacco-pipes are Indian inventions. If we study all the different kinds of Indian pipes in America we shall find that they vary most considerably as to shape, and that in this department the Indians have achieved quite a number of more or less ingenious inventions, as, for example, the use of a filter for draining off the tobacco juice. It is possible in America to note down the evolution of a number of pipe types from the simple tubular pipe.

The coca bush, from which we obtain cocaine, also hails from America. All of the very complicated cultivation of the coca bush must have been tried out by the Indians, just as they have discovered the remarkable qualities of the coca leaves. Coca is chewed together with ashes or lime, and in this we meet with a noteworthy parallel in betel-chewing. Therefore we are unable to declare, off-hand, that the idea of chewing coca together with lime was invented in America independently of influences from Oceania, among other things because the receptacles for the lime in America and Melanesia are so strikingly similar, and, in addition, they are even made from gourds (*Lagenaria*), *i.e.* one of the few cultivated plants that were common to the Old and the New Worlds in pre-Columbian times.

Cacao, too, is another of the important cultivated plants that we have originally obtained from the Indians. In pre-Columbian times the Indians drank cacao unsweetened, or sweetened with honey.

Among textile plants cultivated in America, cotton is the most important, and it was known to the Indians in pre-Columbian times. At that time the species of cotton that were cultivated in America were different from those that were cultivated in the Old World before the discovery. Hence we cannot, of course, know whether the spinning of yarn or the art of weaving cloth was independently invented by the Indians.

The Indians of America cultivate a spice plant, Spanish pepper (Cayenne pepper), which is of the greatest importance to them. They have discovered that by the burning of this pepper there is developed a sort of "poison gas" that proves effective in laying siege to villages fortified by palisades.

The great majority of Indian cultivated plants are tropical or sub-tropical, and must in the first instance have been discovered in Central America or in the tropical section of South America. In this department the achievement contributed by the North American Indians north of Mexico is inconsiderable. Of the above-mentioned really important plants tobacco is the only one that possibly may have originated there. Among the less important ones the sunflower and the Jerusalem artichoke derive their origin from North America.

If we knew the history of the American cultivated plants, then we should know the history of the Indians from very far back in time. Of course, the Indians did not discover all the cultivated plants at the same time or in the same place. As

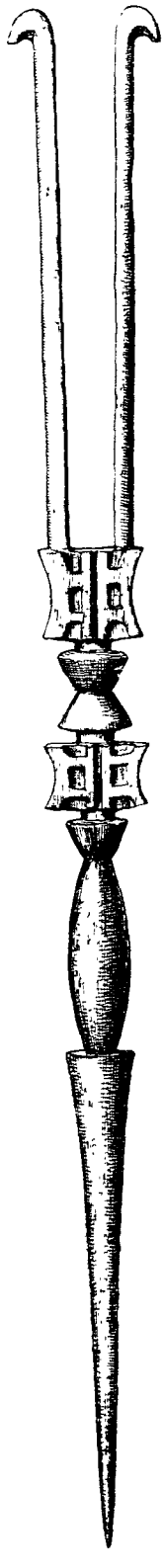


FIG. 2.

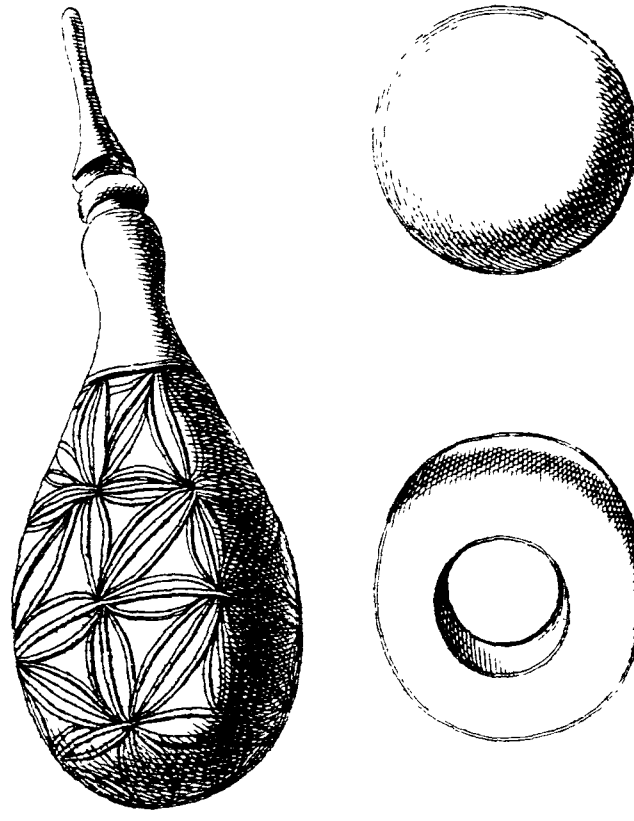


FIG. 3.

FIG. 2.—PRONGED CIGAR-HOLDER, FROM THE DESANA, NORTH-WESTERN BRAZIL. ($\frac{1}{4}$.)

FIG. 3.—ENEMA SYRINGE, RUBBER BALL, AND ELASTIC RING FROM THE INDIANS OF GUIANA AND THE AMAZON REGION. (AFTER BARRERE.)

has been shown by Guernsey and Kidder [4], the Basket-makers of south-western North America were acquainted with maize, but not with beans, and it is probable that also in South America beans were disseminated much later than maize, as is evident from so many Indian tribes possessing their own words for maize, whilst having borrowed the names for beans from Quichua and Guarani. Cotton appears to have been originally propagated in South America by means of the migrations of the Caribs and the Guarani tribes.

The following important plants were probably cultivated everywhere in America where there were agriculturists, and where their cultivation was possible from climatic conditions: maize, pumpkins, and tobacco. The following have not attained their widest possible distribution: beans, sweet potatoes, cotton, potatoes, *Lagenaria* (bottle-gourd), manioc, cacao, and coca.

There are many wild-growing plants that the Indians have put to use for different purposes, and in this direction they have made a number of important inventions. It is to Indians that credit is due for the discovery of rubber and its utilization in the form of rubber balls, enema syringes, waterproof fabric, elastic rings, etc. (Fig. 3.) It is a matter of fact that in pre-Columbian times the Indians were acquainted with all the qualities that make rubber so valuable in modern industry. No corresponding discovery had ever been made in the Old World prior to the discovery of America, in spite of the fact that both in Asia and Africa there are found rubber trees of various kinds.

The Indians have discovered a number of poisons, among others the terrible curare poison which they produce from certain *Strychnos* varieties, including *Strychnos toxifera*, and principally used for their blowgun darts. A horrible cardiac poison is obtained by the Chocó Indians from a tree called pakurú-neará. [5] These Indians also produce a very virulent arrow-poison from the secretions of a certain frog.

In addition to cultivated narcotic plants, the Indians know several wild-growing ones, as, for instance, parica (*Piptadenia*). They have invented curious tubes, which they use in snuffing up powdered parica seeds, whereby a strongly intoxicating effect is produced. They are also known to have used parica for intoxicating enema injections. Guaraná, peyote (a kind of cactus), and Paraguay tea (maté) have also been discovered by Indians.

The Indians possessed a considerable knowledge of medicinal plants. Among the most important discovered by them are quinine, balsam of copaiba, and ipecacuanha. It is probable that the Indians, before it was known in the Old World, understood the application of aseptics, seeing that certain tribes dress their wounds with boiled water, without having learned this from the whites.

The Indians have discovered how to make use of a number of wild-growing American plants for making cord, etc. Among these, caraguata (*Bromelia serra*)

may be noted. A certain proportion of the tools they used in working up the fibre are undoubtedly also Indian inventions.

From the bark of certain trees the Indians manufacture bast cloth, but as a similar manufacture is also known from Oceania, it cannot definitely be asserted that in this case the Indians have made an entirely independent discovery. Similarity between the implements used both within and outside America in the preparation of bark-cloth even speaks against such a supposition.

From the above it will be seen that the Indians in a wonderful way have known how to utilize the plant world by which they were surrounded, and in this province the peoples of the Old World have learnt a very great deal indeed from the Indians. In fact, during the period exceeding 400 years that Europeans have been in America, they have achieved not one single important discovery in this department. Evidently the Indians have carried out tests and experiments with everything they found available.

Here I may add that the very idea of cultivation must, in America, be an Indian invention, for if it had been introduced from abroad it must have been imported in association with some alien cultivable plant. For we have no reason whatever for supposing that the plants first cultivated by the Indians were the sweet potato and the bottle-gourd (*Lagenaria*)—plants that in pre-Columbian time probably they had in common with Oceania—cultivation having instead been inaugurated with some purely American utility plant. It is in fact evident that the sweet potato is in America a plant whose cultivation began at a later date than, for example, maize. This is apparent from linguistic comparisons, upon which I cannot here enter into details, as that would carry me into too lengthy a discussion.

If we now pass on to domestic animals we shall find that not many are of purely American origin. For this we cannot blame the Indians, but the American fauna. They have domesticated the llama, alpaca, guinea-pig, musk-duck and the turkey. The dog's companionship with man is of such remote antiquity that it was possibly brought along when man first immigrated into the New World. It is, however, probable that the Indians have domesticated also one or more indigenous species of the Canis family. [6] A couple of American bee species have also been adopted for cultivation by the Indians. That this was a perfectly independent development is quite obvious. The cultivation of the cochineal bug, for the production of red pigment, is also an Indian invention. The employment of the llama as a beast of burden must necessarily be an Indian invention, as also the pack-saddle pertaining to it.

Plants and domestic animals of the New and the Old Worlds respectively with one or two exceptions differ from each other, hence we are able to ascertain that their discovery and utilization must have been independently made in the New World. This does not, however, apply in the case of metals, as the same metals are found both in the New World and the Old. It is nevertheless probable that it

was the Indians who first discovered, at any rate, one metal which is found in the Old World as well as in the New, namely, platinum. [7] In regard to the working of metals, the Inca Indians achieved an invention that we of the Old World only in recent times have succeeded in accomplishing—and then by a method quite different to that of the Indians—namely, the art of welding copper. Thus we have in the Gothenburg Museum a copper rattle from Peru, in which the different parts are not soldered together, but welded, as has been shown by one of Sweden's leading metallurgists, Mr. Hultgren. [8]

If we turn to the subject of dwellings, clothing, ornaments, tools, weapons, and so on, we shall find that the Indians do not possess much that is not also found in the Old World and which may, off-hand, be stated as having been invented by them, but nevertheless it appears improbable that man would find it easier to subject a new plant to cultivation than to invent some new implement or process in order to benefit by it.

We shall see that the Indians have invented more than one thing that was not known to any of the innumerable peoples of widely variegated culture in the Old World—that is to say, that they have made certain inventions that cannot be explained by the fact that they alone possessed the raw material. I have already referred to those objects which they manufacture from rubber.

In the realm of ceramics the application of sponge spicules in the clay, for cohesion and durability, is an invention made in Amazonas, and, so far as I am aware, not known from any other part of the world. [9] The spicules, which act as do iron rods in reinforced concrete, impart great strength to the clay vessels. Of ceramic forms many exist in the New World that are not met with in the Old. Thus, for example, vessels with a hollow rim, like the one seen in Fig. 4, probably represent a type that is of a purely American origin.

The hammock is an invention that we have received from the Indians. Its autochthonous occurrence in New Guinea may well be considered highly doubtful. It is, moreover, unquestionably established that this comfortable form of bed was unknown outside America prior to the discovery of that continent. The hammock is an essentially Amazonian cultural element.

The reduction of head-trophies, by removing the skull and shrinking the head to the size of a fist, whilst still retaining the shape of the facial features, as the Jivaro Indians do, is a strange custom which is not known outside America.

Among musical instruments in America there are many that do not occur in the Old World, such as a quaint wind-instrument from Guiana (Fig. 5), a strange-looking flute in the shape of an axe, described by Bolinder, from the Motilones (Fig. 6). Many forms of signalling gongs, too, are of purely Indian origin, as is also the "teponatzli," the well-known "Zungentrommel" of the Mexicans. To this subject I shall recur later.

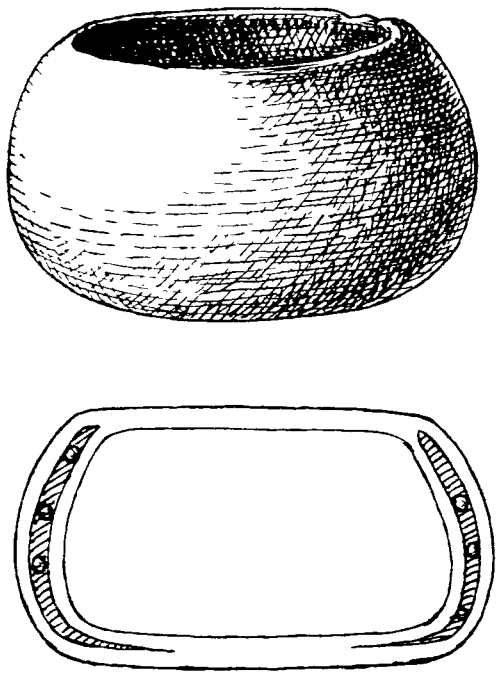


FIG. 4.

VESSEL WITH A HOLLOW RIM, FOUND AT TARAPAYU, BOLIVIA

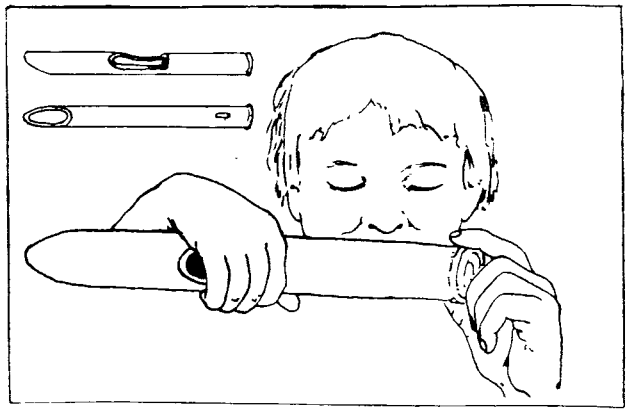


FIG. 5.

WANNISEMO-I FLUTE FROM BRITISH GUIANA.
(AFTER WALTER ROTH.)

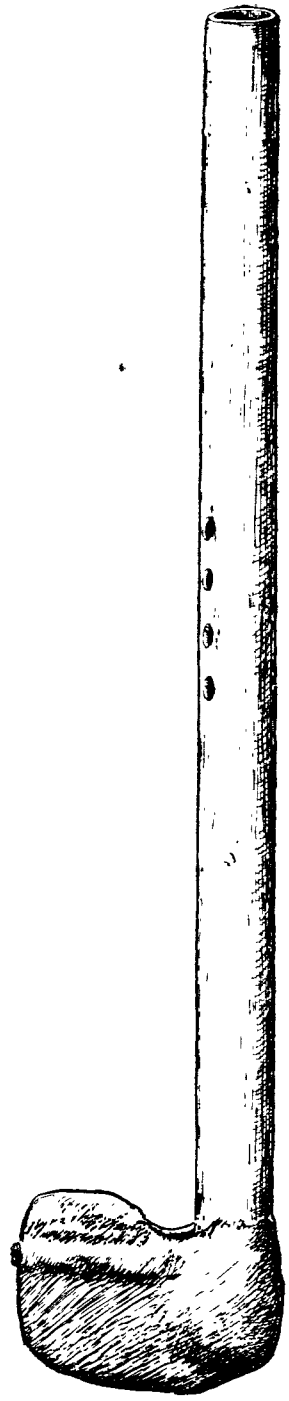


FIG 6

AXE-SHAPED FLUTE FROM
THE MOTILONES, COLOMBIA ()

Of weapons there is none of especially Indian type, but, on the other hand, the Indians have made certain minor inventions as to weapons that are not found in the Old World, such as several methods of affixing feathers to arrows: for example, Peruvian cemented feathering, sewed feathering, and others. Neither can it with certainty be maintained that any Indian method in hunting is entirely original. Nor—as regards fishing—can there be any method pointed to that only the Indians know. This latter is quite interesting to note in view of all we know of their important contribution as agriculturists to the progress of human culture.

In the way of dress and ornaments it is only as regards details that it can be shown that the Indians have hit upon anything unknown in the Old World. If, however, we study the ornaments more closely, we shall find that the Indians of South America possess many original details. In the first place, this may be said of the feather ornaments. As is well known, in the manufacture of such ornaments the Indians are experts.

It would be almost unreasonable to expect that in Indian architectural art we might meet with anything unparalleled among the many-sided civilizations of the Old World. The dwelling-constructions of the Pueblo Indians are, however, in no small degree original.

The stoneless character of the country has in certain parts of America given rise to many minor inventions, such as wooden knives, balls of clay instead of stones in "stone-cooking," earthenware supports for roasting-dishes, "saddle-stones" of burnt clay, and so on. To this I shall again refer.

The employment of knotted strings ("quipus") for keeping records is widely distributed both within and out of America. Entirely original, and undoubtedly invented by the Indians, is, however, the arrangement of the knots according to the decimal system, which was known to the Incas. From the way the knots were arranged they were thus able, for example, distinctly to differentiate between numbers such as 31.301 and 3001. The numerical system of the Maya Indians is also original, as is also a great deal in their calendar and writings. Their chronological system actually encompasses so much that is of an original character that by itself alone it suffices to demonstrate the high capacity of the Indians for making inventions. In the Old World there exists no exact parallel to the wonderful chronological system of the Mayas.

I also think I should add that almost every Indian article possesses some detail, a something that perhaps is not always easy definitely to describe, but which to us reveals its Indian origin. It is due to all these trifling details that among an unlabelled ethnographical collection we are able to pick out the things that are Indian, and, as a rule, also determine from what particular tribe they originate. A good many of these apparently insignificant details are perhaps not infrequently more advanced inventions than may be supposed by anyone who does not himself use the weapon or implement in question, but only sees it as a museum official, or something similar.

It would be unfair to expect that Indians should have invented any ornaments that are not found in the Old World, although, when it comes to the combining of ornaments, nearly every tribe is able to present something that is characteristic of themselves.

A really thorough-going knowledge of the culture in certain parts of the Old World, as of the New, would probably result in showing that considerably more than what I have here adduced had been invented by the Indians and was not known outside America prior to its discovery. Also in regard to social structure and the spiritual world, notions may no doubt be found that have a purely Indian origin. This is, however, not possible to prove conclusively unless one possesses a thorough knowledge of the geographical distribution all over the globe of the different conceptions on these subjects. A custom like, for instance, cremation in association with endocannibalism is probably purely Indian. This to give one example only. In great part the Incan state organization may well be supposed to be original.

If we study the distribution of those discoveries and inventions which the Indians must have independently made, on account of their non-occurrence in the Old World, we shall find that a surprisingly great proportion of them fall within the Amazon region. The impression is also forced upon one that the independently made inventions belong more to the agricultural tribes than to those living by hunting and fishing. It is also evident that the Inca region was at least as important a culture centre as Central America and Mexico. As the present paper principally deals with South America it is probable that I have overlooked some discoveries and inventions made by the Indians of North America.

It is mostly where the Indians have been prosperous that one meets with a large proportion of inventions and discoveries. I am afraid it is not always true that necessity is the mother of invention. If it were true, then inventions ought to have been made in places where the struggle for existence was very hard. But instead they are made where conditions of life are easy.

We should bear in mind that migratory movements are productive of inventions, or of loans of new cultural elements and modifications of old ones. In the history of the earliest inventions we may therefore be certain that substitutes have played an important part, and these are worth a thorough study. A people may, for example, have emigrated from a district in which was found an excellent material for carrying-baskets, and entered another where such material was absent. Thus they have had to find some substitute which probably led to the invention of new basket types that were better suited to the new conditions. Where the new district was inhabited by people that possessed carrying-baskets or satchels made from some indigenous materials, then it is probable that the existing forms made from that material were simply copied. But in case nothing similar was met with, the immigrants were obliged either to invent something new, or else to leave off carrying in the way they

were used to. This sort of adaptation to natural conditions of the locality of abode must have played an exceedingly important part in the history of inventions.

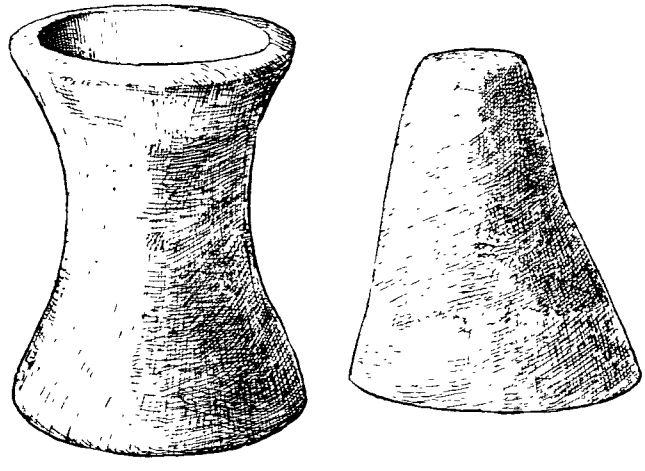
I shall here confine myself to mentioning one particular kind of substitute that in America has been fruitful of a number of inventions, namely, substitutes for stone. America contains many large regions more or less devoid of stone. Among such regions I have myself visited El Gran Chaco and Mojos in South America, and the Sacramento River delta area in California.

The Chaco is in certain parts so bare of stones that one may live in them for many months without finding a stone as big as one's hand. In my books I have pointed out that these conditions have caused the inhabitants to cast about for various substitutes for stone. There the Indians manufacture knives of hard wood or bone, similar to those found in archæological excavations in districts richer in stone, nearer the Andes. In the same way they also have saws, or scrapers, shaped like those of stone that are in use farther west. In the Chaco I have seen the Indians use their spades, which are of lignum-vitæ, as whetstones. In those parts they also use bolas stones made of hard wood.

In Mojos in Bolivia there are also districts that are very destitute of stones. When d'Orbigny started from Mojos for the mountain regions with Indians of the plains, as they went along they picked up every stone they saw—such was the high value of stones to them—but soon they found this impossible. Stones were precious things in their country. This circumstance has, among other things, resulted in "saddle-stones" having been supplanted by grinding implements—not mortars—made from wood or burnt clay. Of these, both the lower slab as well as "mullers" are abundantly present in the ancient dwelling sites at Mojos.

Large districts of Amazonas are—like Mojos—very deficient in stones: in consequence, trading in stone celts came into being. Nowadays there is not a single Indian tribe in the Amazonas that possesses arrow-heads of stone: the arrow-points are nearly always made of hard wood or bamboo. It is, however, evident that formerly stone points were fairly commonly used, as is proved by local archæological discoveries. It is very probable that when the Indians first took possession of Amazonas they had stone-pointed arrows, but that they subsequently had to find some substitute for their stone arrow-heads owing to the difficulty in obtaining the raw material. In Mojos, again, the ancients had sling-stones of burnt clay, whilst bits of broken pottery served as whetstones for arrow-heads of bone. [10]

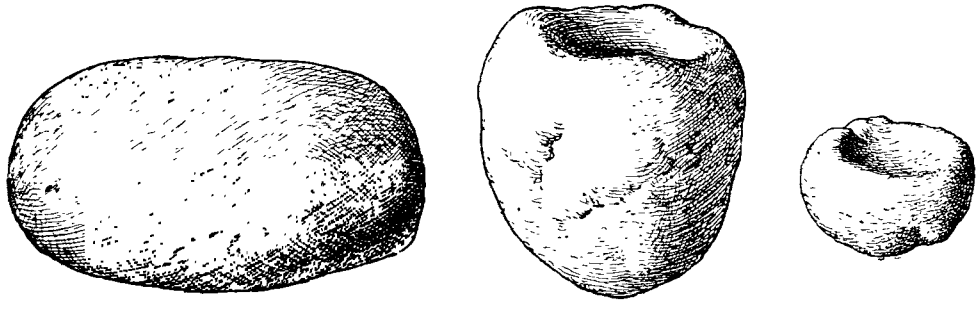
An interesting point is the use of hearth-stones made from burnt clay. These are even found in localities where stones occur, as will be seen from a map which I have published. [11] This is an instance of substitutional invention having spread into regions where the substitute was not needed. The form has also been modified and made barrel-shaped (Fig. 7, *a*) instead of pyramidal (Fig. 7, *b*), its supposed original shape. Among substitutes for stones I also think we should count the shell



a *b*

FIG. 7.—HEARTH-STONES OF BAKED CLAY.

a. FROM THE BANIVA, NORTH-WEST BRAZIL. *b*. FROM THE CAVINA, BOLIVIA. ($\frac{2}{3}$)



a *b* *c*

FIG. 8.

a. BALL OF BAKED CLAY, USED FOR "STONE-BOILING." *b*. AND *c*. CUPS OF BURNT CLAY, FROM A MOUND NEAR LODI, CALIFORNIA ($\frac{2}{3}$)

axes of the West Indies. But this provides no reason for supposing any connection between the shell axes of Oceania and those of the West Indies.

Of very especial interest appear to me the substitutes for stones that are found in the delta region of the Sacramento River in California. There, together with some Berkeley students, I have at a spot near Lodi examined a mound which had been discovered by Mr. J. Dawson in a very stoneless tract.

In the old days the majority of the Indians of California possessed no clay vessels for preparing their food; the cooking was done by heating stones in the camp fire, and when red-hot they were dropped into a watertight basket which was made to serve as a cooking-pot. This basket with water or soup could not be placed directly on the fire, as then of course it would have been burnt to pieces. The stones used in the "stone-boiling" process were as big as a man's fist or perhaps slightly smaller.

The Indians that once inhabited the dwelling-site near Lodi possessed no clay vessels for cooking their food in, but neither did they have any stones for "stone-boiling." Very few stones of that kind have been discovered in the mound. But this method of cooking was nevertheless known to them, only that instead of stones they used balls of baked clay (Fig. 8, *a*). Of such there are hundreds to be found in the excavating of the mound. Fragments of them occur in thousands. The ancient Lodi inhabitants will thus be seen to have made no pottery, but yet to have used baked clay very largely.

These objects did not, however, constitute our most important finds in the Lodi mound, which were certain fumbling attempts at forming the balls just referred to into small bowls of burnt clay (Fig. 8, *b*). These are, however, only quite small, and cannot be supposed to have served for anything beyond cups for holding paint, or such like, but they nevertheless represent the germ of pottery-making. It is to Mr. Dawson, an amateur archæologist, of Lodi, that the discovery of this mound may properly be ascribed, and he has here recovered two very small bowls, one of which has a hole pierced through the rim so that it could be suspended.

Are not these finds capable of furnishing us with an explanation as to how ceramics have been invented, at all events in one spot? The theory has been advanced that man, to begin with, possessed baskets coated with clay, and then that someone may have, by mistake, put one of those baskets into the fire, with the result that the fire consumed the basketwork but left a vessel of burnt clay. This theory is simply preposterous. There would have been no other result than a rubble of burnt clay. Much more natural it seems to me, that man at first used baked clay for less fragile things than pottery, and that he made the first attempts at pottery-making only after having learnt how to wash the clay, or in some other way to prepare it. It must have begun in the same simple way as was done by the ancient Indians of Lodi, namely, by way of tiny bowls. Subsequently, when larger sizes seemed desirable, the various building-up methods were invented, methods

that we know from different parts of the world. It is not, however, unreasonable to suppose that the technique used in basketry led up to the idea of building the vessels with rolls of clay laid in spiral courses. But clay vessels were not originally baskets smeared with clay.

It is not by any means my intention to maintain that the art of pottery-making was originally invented at Lodi, and that from there it was disseminated over the remainder of America. I do not think that the Lodi mound is so very old. I only wish to say that the ancient Indians of Lodi did invent pottery-making, and that therefore not all American ceramics have a common origin. It is not impossible, however, that the Lodi Indians' invention is still surviving in the ceramics of the Yokut Indians, about which Kroeber [12], *inter alia*, writes :—

> "The distinctive feature of this pottery is its excessive crudeness. It appears to have been made by a rough fitting together of pieces of clay, or a pressing out of a lump. There is no evidence of the coiling and smoothing method. It is doubtful whether the clay contains tempering. Glue, blood, or a sticky substance may have been introduced as binding material. The colour is from light to dark grey. There is no slip, wash or pattern, except now and then a rude incision obviously modelled on a basket pattern. The shapes are indefinitely varied, without approach to standarized forms. A row of the vessels looks as if produced by children or experimenters.
>
> "Even the uses are not known. Most of the pots show evidences of employment in the fire. But their purposes must have been special, since the ordinary cooking of the Yokuts is as regularly performed in baskets as among other groups. Small vessels may have been intended for services that we can only suspect. Thus the Yaudanchi affirm that they formerly kept tobacco in hollowed clay balls.
>
> "Archæology gives no information as to the age of the industry. There has been little collecting in the Yokuts area and no systematic exploration. The prehistoric clay cooking balls or sling shots of the stoneless Stockton plains, where the Yokuts Chulamni lived in the historic period, suggest a connection; but no vessels of the same material have ever been found with these. The Clear Lake Pomo sometimes make a minute receptacle by pressing a hole in a lump of clay: but they do not bake these little articles. Evidently there were some anticipations toward pottery-making latent in parts of California: and the Yokuts carried these tentative steps a little further. But the inference of a stimulus, however indirect, coming through their immediate Shoshonean neighbours from the pottery-making Shoshoneans of the south or east, can hardly be avoided: and therewith the interpretation of an ultimate south-western origin of the art."

Thus far Kroeber. That the Lodi Indians' crude attempts at making small bowls could have been due to inspiration received from the east I consider out of

the question, because if that had been the case they would have manufactured real clay vessels, and then we should not have been able so clearly to perceive the connection between the latter and the clay balls.

Many another change in the material is bound to take place when a people migrates long distances. And change of material may often influence the shape of an implement.

Migration from one region into another therefore should easily bring about, for example, a change in the shape of a bow, because the kind of wood from which the bows used to be made is not found in the new country, whose indigenous woods are not suitable for the manufacture of bows of the old shape. If nothing but palm wood is available, it comes most natural to give the bows a flattened shape, as that is the form which results from cutting them out of the hard cortical wood. Thus it is incorrect to speak of the section of a bow as something that had to be unchangingly adhered to through thousands of years, without taking into consideration the kind of wood that formed the material.

In the same way the shapes of blowguns are of course very much dependent on a supply of suitable material. The Cuna of Darien have reeds that are too short for blowguns. (Fig. 9.) They therefore join three lengths of reed together much in the same way as is sometimes done with our fishing rods. If, for example, a district is devoid of the material that elsewhere was habitually employed, then people either have to find some substitute material or else discard the use of blowguns. There are certain ethnographers who appear to find this fact hard to understand.

I have now given some account of such inventions and discoveries as must have been made in America, for the reason that they were unknown in the rest of the world prior to the discovery of America, as well as of such as obviously constitute adaptations to extreme physiographical conditions. My next aim will be to discuss some further inventions which, although possessed in common by the Old World and the New at the time of the discovery, appear to have been independently made in America.

If the Indians of western South America had possessed bronze in which the tin and the copper were mixed in the same proportion as in the Old World, and if it could be proved that their bronze age followed immediately upon their stone age, then it would be quite clear that bronze was an importation from the Old World. Now we know that such was not the case, but that the bronze age was preceded by a copper age, and that the Indians of Bolivia only in a later stage of the bronze age succeeded in discovering an effective proportion between tin and copper. [13] This discovery, which appears to have been made not far from Lake Titicaca, subsequently spread to the Peruvian coast and Mexico. [14] It is therefore evident that bronze is an invention independently made in America. In the same way we ought in every case to examine whether in any given district an invention occurs in its completed stage or whether we there find preliminary stages of it, in which latter

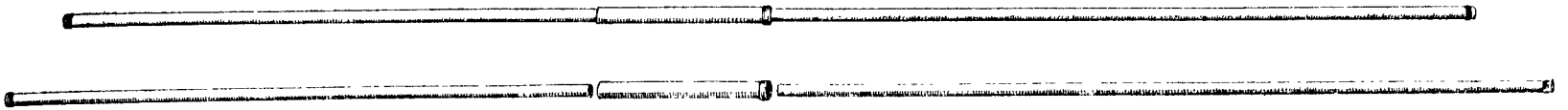


FIG. 9.— BLOWGUN, FROM THE CUNA INDIANS IN DARIEN ($\frac{1}{5}$.)

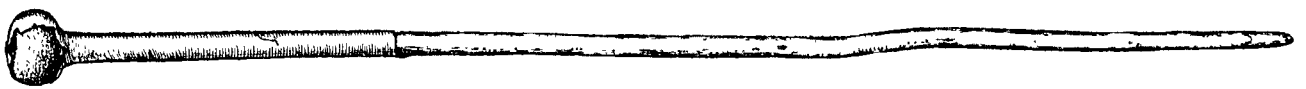


FIG. 10.—MACE WITH HEAD IN THE FORM OF A STONE RING; FOUND AT ICA, COAST OF PERU. ($\frac{1}{8}$.)

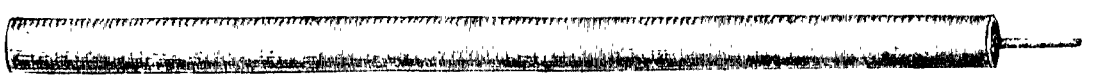


FIG. 11.— ENEMA TUBE, FROM THE CHOCÓ INDIANS, COLOMBIA.

case it is very probable that it is indigenous, or that at any rate the improvements have been achieved in America.

To choose a few examples. In a special paper I have made a study of the distribution of palisades in South America [15], and then found that there occur both very complex types with loopholes, pitfalls, and so on, and with double rows of poles, and also palisades consisting of nothing beyond fences of thorny trees, more or less elaborately constructed. It is quite obvious that the earliest palisades in South America simply consisted of fences, and that subsequently these protections round the huts developed into palisades of more or less complicated nature. This circumstance speaks in favour of palisades having been independently invented in America.

The socketed axe-head—that is, axes in which the handle is inserted into the head—in America occur only within the culture region in Peru. After Ambrosetti I have, in vol. 4 of my series, "Comparative Ethnographical Studies," clearly shown that in that region the Indians, to begin with, possessed T-shaped axes of copper, which they fastened to a handle with a piece of raw-hide taken round the handle and sewn together at the back. On other axes this binding was at a later stage imitated in metal, and a shaft-hole axe resulted. Even the stitches by which the raw-hide used to be secured were reproduced in the metal, so that they remained as an ornament. As a matter of fact, it can here be clearly seen how the process developed by which the socketed axe was invented in America, where otherwise it was unknown, and the socketed axe represents a very important invention whose distribution in the Old World is, and even formerly was, very extensive. That it did not become so widely spread in America is probably ascribable to the circumstance that it was invented at a relatively late period—that is to say, not very long before the discovery. Socketed stone celts are not known from America.

Metal tweezers are—as was first pointed out by Uhle [16]—an imitation of the tweezers of mussel-shell, resembling those which at the time of the discovery were still being used by the Araucanians. In Peru the earlier tweezers, which are of mussel shape, are as a rule made of copper, whilst tweezers of a shape more divergent from that of the original mussel-shell tweezers are made of bronze. [17] This lends support to Uhle's theory. It proves that metal tweezers are Indian inventions. Whether tweezers, generally speaking, were independently invented by the Indians is another question.

Another instance is supplied by the so-called signalling "drum." This instrument occurs in America in quite a number of forms. To begin with, there are the very simplest ones, mentioned by K. v. d. Steinen [18] from the Bakairí and the Kamayurá. He writes: "Im dritten Bakairidorf und bei den Kamayurá wurde als Pauke ein hohler Baum der auf der Erde lag benutzt." And of another tribe, the Auetö, of the same region, Max Schmidt writes [19]:—"In der Mitte des Innenraumes befand sich am Boden ein dicker etwa 6 m. langer, ausgehöhlter Baumstamm

den mit einen grossen Holzklotz einer Trommel gleich geschlagen wird, um bei wichtigen Angelegenheiten die männliche Auetöbevölkerung schnell zusammenrufen." According to Lange [20], the Arandeuara use for a gong a hollow log suspended from a tree.

In the instances I have just cited it appears that the gongs in question merely consisted of hollow or roughly scooped-out tree trunks. These are evidently forms much more primitive than the well-made gongs that I shall refer to below. A still more simple method of signalling is by beating on the trunk of a tree in the forest. Thus Farabee [21] writes of the Amahuaca Indians of Peru that they occasionally signalled by striking with a heavy mallet upon a flat root of the Alatea tree, after having stripped the bark from it, but without cutting it off.

Very crude gongs (Schlitztrommeln) are also found among the Nonamá Indians, a tribe belonging to the Chocó group. During my latest journey in South America (1927) I visited those Indians on Rio Docordó in Colombia. The Nonamá (also called Noanamá) are settled along Rio San Juan and its affluents. Amongst other things that I noted among them was a large wooden gong: it looks rather like a clumsily-made canoe that has been suspended by one end, whilst the other rests on the floor of the pile-built house. It is beaten with two wooden mallets: one of these is used on the outside, and the other on the inside, of the gong, which is placed in the centre of the hut. The resemblance between a gong of this kind and a canoe is so great that it is quite reasonable to suppose that the Indians formerly used as gongs their canoes, which are often drawn up underneath the floor of their pile-houses or laid on stagings.

We next come to the kind of "Schlitztrommel" usually described as a signalling gong; it is characterized by having been carefully hollowed out from a tree trunk, in such a way as to leave the aperture—or apertures—quite small and narrow. The best known are those which have been described by Gumilla [22] and Koch-Grünberg [23], from Rio Orinoco and Rio Negro. Besides the two authors just referred to, many others have mentioned this type of gong, even as far back as the time of the discovery, as, for instance, Carvajal [24], so that therefore there can be no doubt whatever that it existed in America already at that time. As already pointed out by d'Harcourt [25], in America these gongs are not of uniform shape, but present wide variety as regards the apertures.

Lastly, I suppose that with the above type of gongs we also ought to class the Mexican and Central American "Zungentrommeln" called Teponatzli, a type that also occurred in Haiti at the time of the discovery. [26] With the majority of these better-class gongs, whether "Schlitz-" or "Zungentrommeln," drumsticks are used whose heads are covered with rubber.

From the above it will be evident that in America we find very great variety as to form in the "Schlitz-" and "Zungentrommeln," so that we meet with a multitude of shapes, ranging from the very earliest and primitive to the most perfected.

If it might be supposed that the Indians learnt from Melanesia the use of signalling gongs, that specialized form of it which is known as "teponatzli" must in any case be American, as it does not occur in Melanesia. Neither am I aware that such curious concavities as, for example, those found on the signalling gongs from Orinoco, are known from Melanesia.

As will have been apparent from the above review, the Chocó Indians signal by beating on a very crude "drum" resembling a suspended canoe, whilst the Auetö Indians strike a suspended hollow tree trunk. The supposed "imported" Melanesian signalling gong may thus be taken to have inspired both improvements and simplifications: or we may, on the other hand, suppose that the Indians themselves have hit upon the idea of signalling by way of beating upon a hollow and suspended tree trunk or canoe, and that they have independently invented the teponatzli—but, at the same time, that they have learnt from Melanesia of a type of signalling gong which now no longer exists, but has been supplanted by other types. If we study the variations as to form, we shall no doubt incline to the opinion that gongs of this type represent an invention independently made in America. We must bear in mind that the mere circumstance of signalling gongs occurring both in Melanesia and America does not constitute conclusive proof of a common origin.

The idea of beating on signalling gongs as well as on the teponatzli—in the latter case with rubber-covered drumsticks—must be of Indian origin, because nothing similar is known outside of America. That the teponatzli is intimately connected with other gongs of a similar type is obvious, although it is not used for signalling. I think it most natural to suppose the invention of these gongs to have come about by people to begin with having sent out signals by beating on hollow trees in the forest, subsequently carrying them home to the village, or that signalling was done by drumming on canoes or wooden troughs. Then by degrees these makeshift gongs have been improved upon in various ways.

The liana bridge is also counted among the culture elements that certain investigators consider as having in America a Melanesian origin. Nevertheless, many more important bridge constructions of this kind are known from America than from Melanesia, as is evident, for example, from Cobo's [27] excellent description of the bridges of the Incan kingdom. There had also existed a type of bridge, "uruya," which is probably unknown in Melanesia. In America, too, Botocudos and Sirionós have exceedingly simple bridges consisting of one or two lianas stretched across the river.

Those who believe that the liana bridge is a culture element imported from Melanesia into America, is it their opinion that the primitive Sirionó and Botocudo Indians have independently produced these inventions, or that their bridges are a simplified form of other tribes' more elaborate bridge constructions? According to them, it would appear that it is neither the poorest nor the superior suspension bridges that the Indians have learnt from Melanesia to construct, but only such as

are somewhere in between. It is, moreover, to be noted that the Indians possess several other types of bridges: floating bridges (Aymara), foot-bridges of poles laid across (Huari), and cantilever constructions (Quichua). Consequently it appears probable that the art of bridge-building was independently invented in America.

To the Oceanian culture elements also belong maces with heads in the form of stone rings, either smooth (Fig. 10) or more or less star-shaped. Correspondence between certain Melanesian maces and others recovered in Peru is indeed striking, and appears to furnish proof of a common origin.

It should, however, be noted that the stone-ring mace was preceded by the digging-stick of the type used by the Bushmen, and that these implements at the time of the discovery existed both in California [28] and southern Chile [29]. The digging-stick would thus have been an exceedingly ancient culture element in America—unless it was independently invented both in the extreme south of South America and in California. Strictly speaking, a mace with a smooth stone head is nothing but a digging-stick used for whacking people over the head. Thus we must either believe that in remote antiquity the Indians received the digging-stick with the stone ring from Oceania, or that from that quarter they have only learnt how to give more of a star-shape to their mace-heads, or else that in this department they have not learnt anything from anywhere. The idea of making mace-heads of metal, such as the Indians of Peru possessed at the time of the discovery, must, of course, be their own. In this they have partly imitated the stone forms, but have, in addition, invented one or two things originally of their own.

To those inventions that in America we are able to trace from their most simple forms up to their most complex also belong quipus, which I have already mentioned. In large parts of South America, Central and North America, the Indians possess simple quipus, of which the common feature is that they consist of a single cord with knots, used for keeping record of days. More complicated quipus occur only in Peru. [30]

In this connection I wish to add a few words on Indian ceramics in general. In ceramics, among the most important inventions are shaping of clay vessels, or parts of clay vessels, in a mould, painting prior to firing, affixing of handles, feet and so on. These inventions were unknown in the earliest ceramics that have been discovered in America, as, for example, at Ancon on the coast of Peru, underneath the lava in Mexico, and elsewhere. Like many other things this goes to show that, in America, ceramic art has undergone a development that has not only been artistic, but also embodied an addition of new inventions. If the mere knowledge of the simplest kinds of ceramics had reached America from the Old World, then the ceramic inventions just referred to must be American, or else they must successively have travelled from the Old World to America. If so, they must have been introduced into Peru or Central America, as it is evident, judging from the process of distribution, that it is from those parts they originated.

The manioc-grater (Fig. 1) must, as I have already said, be an American invention. It is also interesting to note how this invention has been improved upon all the way from simple spiny roots up to well-made boards artistically encrusted with quartz splinters. [31]

In the same way the manioc press is, as I have said, an Indian invention. Its distribution has been studied in detail by Métraux [32], who points out that its origin appears to lie in Guiana. This invention is not known by the tribes inhabiting the upper Xingú, who squeeze out the poisonous juice through a basketwork sieve. The Uitoto, Yamamadi, and Kayapó employ a very primitive form of press, which Métraux no doubt rightly supposes to be more original than the well-known basket bag. These tribes who, as far as we know, have not for a very long time had any intercourse with each other, inhabit the extreme edge of the distribution area of the manioc press. The migrations of the Guarani Indians have evidently contributed to the dissemination of the manioc press. To Central America it has only penetrated in post-Columbian times, along with the black Caribs transferred to that territory from the West Indies. Seeing that the manioc-grater is found on the upper Xingú, it appears there to be older than the basketwork bag. Even of this implement the highest forms are found in Guiana, whilst its simpler forms occur peripherally in its area of distribution.

A culture element of which I have made special study is the enema syringe. In this we have before us an invention that we are able to prove to be purely Indian in part, seeing that we know the rubber syringe (Fig. 3) to be an Indian invention. At the same time it is an invention of which in America there are two forms, namely, the enema tube (Fig. 11) and the enema syringe, of which the latter is supposedly an improvement upon the former. In favour of the enema tube also being an American invention speaks the circumstance of it not being known either in Oceania or northern Asia. As regards the rubber syringe, it is an invention which was preceded by the hollow rubber ball.

In the foregoing I have shown the development of variation in form of several inventions that must have been made in America because they are not found elsewhere, such as the manioc press, the manioc-grater, and the enema syringe made of rubber. I have also shown that the socketed copper axe was invented in America. Moreover, I have pointed out culture elements common to America and the Old World which in America present similar developments of variation as to form, from the most primitive types up to the most elaborate.

In respect of several other culture elements much the same thing can be shown to be the case. I would therefore like to put the question: Just *where* did the foreign influence come into play: was it when the first attempts were made, or when improvements were being achieved—or must we suppose that these inventions have always been controlled from the Old World? For my own part I cannot but find it logical to suppose that such cultural elements as the liana bridge, the signalling

gong, etc., have in the same way as the manioc press and the manioc-grater been invented in America, and there successively improved. This way of thinking does not in any way contradict that pre-Columbian intercommunication existed between the New and the Old Worlds, but only maintains that all common cultural elements are not necessarily derivable from a common origin.

Before passing on to inventions that appear to be American because of their having an isolated distribution in America, I wish to give a few words to inventions that appear to be in some way connected because of being founded on the same principle. I intend to show how certain inventions may have been made.

When the same principle is capable of being applied to two fairly divergent inventions, that circumstance may have been of importance, as thereby one invention may have supplied the idea for another. Inventions that to us appear enormous leaps in human progress may in this way prove to be much less isolated than is *prima facie* apparent. Of this I shall adduce one or two examples.

It is well known that the beam scale as well as the Roman steelyard were known in western South America at the time of the discovery. [33] This is evident from the literature of that period. The question then arises as to whether the beam scale is found in America as a fully completed invention or whether it was suggested by some previous device. This, to me, seems to have been the balanced double-load pole.

It is evident that the carrying pole was in use in America at the time of the discovery, and it was then still employed by the Seri Indians of Mexico. Of these Indians McGee thus writes [34]:—"Ordinarily women are the water-bearers, each carrying an olla balanced on the head with the aid of a slightly elastic annular cushion, usually fashioned of yucca fibre, though in some cases two ollas are slung in nets at the ends of a yoke after the Chinese coolie fashion (this device being apparently accultural)."

From this it appears that he considers the "coolie yoke" to be a post-Columbian culture element in America. This is certainly an erroneous opinion, seeing that this contrivance is mentioned by Oviedo [35], and other writers from Mexico and Darien even as early as the very beginning of the era of the discovery. Oviedo, in fact, has depicted a man carrying by means of such a pole. Any later mention of the yoke-pole I have not come across in the literature. It is true that Wafer [36] has a picture of Cuna Indians, in which is seen a woman carrying loads in this fashion, but this picture is probably partly home-made and copied from elsewhere.

It is a very noteworthy circumstance that this mode of carrying loads, of such common occurrence in eastern Asia, was practised in America at the time of the discovery. That the Indians of northern Mexico did not merely by chance happen to employ this method of carrying burdens, is evident from the fact that they suffered terribly when the Spaniards compelled them to carry loads on their backs, a thing they were entirely unused to.

When it comes to carrying loads the Indians are very conservative, and by no means ready to adopt any novel method instead of the old. For such a change very special and compelling circumstances must be at hand. That any people should suddenly adopt carrying by means of a yoke-pole, I take to be an untenable theory. The method of carrying with a balanced pole is probably a very ancient custom. Pointing to this is the fact, as I have already mentioned, of its being used by the Seri Indians, who are one of the most primitive peoples in the whole of America.

An interesting question to find an answer to is the following: Did the balanced pole inspire the Indians with the idea of the beam balance?

The scales presuppose a need of determining the exact weight of some object. Seeing that we find the beam balance and the steelyard in western South America, where the Indians were great metallurgists, it may well be supposed that the principal use of the beam scales and the steelyard was the weighing out of different metals for making alloys. It is very significant that Oviedo mentions the steelyard [37], in Colombia, just from those Indians that he praises for being skilful goldsmiths. The same may be said of the Indians of the Peruvian coast, where, as mentioned, numbers of scales have been recovered. A rough method of weighing occurs even among primitive tribes who do not possess any proper scales. This is done by comparing the weight of two loads by alternately lifting them, as, for instance, by carefully feeling the weight of a blowgun, and then the weight of another, and so on.

A rough-and-ready kind of "beam balance" that we all are apt to make use of consists of our hands, as when comparing the weights of two objects by holding one in the left hand and the other in the right. This is so natural an action that even Indian children in this manner weigh out any commodity, for instance sugar, that they wish to divide fairly. My wife tells me that she has often seen this done.

From this nature's own weighing apparatus the step to scales proper is, however, a wide one. I have, however, as I have said, asked myself the question whether there exists no Indian invention that may have inspired the idea of the beam balance, and thus has occurred to me the carrying pole. It consists as we know of a pole carried across the shoulder, and with a load suspended from either end. In northern Mexico the Indians occasionally had a net-bag attached to either end of the pole [38], just as sometimes seen on Peruvian beam scales. I therefore wonder whether it be not possible that it is this kind of carrying contrivance that has given the Indians the idea of the beam balance.

The fact that we have no instance of the carrying pole and the beam balance occurring in the same locality, does not preclude that the former may have suggested the latter, because the distribution of the beam balance in Central America was probably greater than so far ascertained, and because it is also possible that the carrying pole, which appears to be a very ancient element, formerly also occurred in western South America. For in Darien, at all events, it formerly was found.

In the carrying pole the same principle is present as in the beam balance. Supposing we have before us a carrying pole with two loads, A and B, these loads must be of equal weight if they are to be carried comfortably, provided the centre of the pole rests on the shoulder. If B has to be exchanged for C, then the weight of C must equal that of B, and consequently also that of A. That the carrying pole was used for establishing certain standard weights has been shown by Oviedo. He relates that Indians in the Province of Chameda (Sonora) did their carrying by means of these balanced poles, and that they handed over to the Spaniards thirty loads of fresh fish, each load weighing one and a-half arroba. [39]

From this we see that in America the beam balance did not constitute an entirely isolated invention, but that its essential principle is embodied in that simpler implement, the carrying pole. As to whether the latter, which probably is a very ancient culture element, seeing that it occurs among a tribe of such primitiveness as the Seri, was independently invented in America is a question upon which I do not here propose to enter.

After all, it may well be considered that a greater leap in cultural progress is represented by passing on to the carrying pole from some other method of carrying loads, than by inventing the beam balance on the basis of the carrying pole. In the former case it implies the exchange of something that has become an old-established habit for something which is new, and involving the use of a different set of muscles than those it has been habitual to employ, whilst in the latter case there is nothing but a specialization as regards the possibilities of the carrying pole.

An invention universally looked upon as being extremely remarkable is that of casting by the method known as "à cire perdue." At the time of the discovery of America this method was known through large portions of the cultured regions in Central and South America. It should, however, at the same time be noted that casting metal in ordinary moulds was known in the same regions, and that it was even more widely distributed than the "cire-perdue" method.

I have given much consideration to the question whether the American Indians, in some part of the continent or other, may not have possessed some kind of casting method that might be considered as an embryo of the "cire-perdue" method, and thus have given the inspiration to invent the latter, and this has led me to think of the method employed in the manufacture of rubber balls and rubber syringes, two inventions of undoubted Indian origin, seeing that they were not known in the Old World prior to the discovery of America. A hollow rubber ball is made by the Indians by shaping a round ball of clay, which is then covered with a coating of rubber. This is then made to coagulate in the smoke over a slow fire, whereupon the rubber is pierced and the clay washed out. This leaves only the rubber shell remaining. The aperture through which this core of clay in this way has been removed, is then closed with a clot of rubber so that the walls of the

rubber ball become airtight. [40] When once the Indians possessed hollow rubber balls, they could find no difficulty in inventing the rubber syringe, which is nothing more or less than a rubber ball with a hole in its wall. This very process of washing out the clay core in the manufacture of the balls may have inspired the idea of using a ball as a syringe.

In the moulding of the hollow rubber ball, as in the "cire-perdue" process, there is the same idea of a core which is dissolved when the moulding has been performed, and in both cases the finished product consists of a hollow object. For the rest I am ready to admit that there is a far cry from the shaping of a hollow rubber ball to the casting of a hollow article of metal, but it is not beyond the bounds of possibility that some Indian metal-moulder may from the moulding of hollow rubber balls have received the idea of casting metal "à cire perdue." Moulding of hollow rubber balls and syringes is known from the upper Amazonas and from other regions of the Amazon basin.

What I have here said of a possible connection between the moulding of hollow rubber balls and the casting of metal "à cire perdue" may perhaps appear somewhat fantastic, but then I have mainly wished to point out that if we wish to inquire for the origin of any complex invention, we should always search for rudimentary stages in similar inventions.

I have adduced these examples with the object of *showing how inventions might have been made, and not in order to prove the way they actually were made.* Even if such inventions as the beam balance and the method of casting "à cire perdue" were not originally native to America, then they must have possessed prototypes, and one is naturally inclined to hunt for other inventions founded upon similar principles. There is nothing that favours the theory that other peoples would have found it easier than the Indians to make these inventions.

The same principle is applicable to some tool or other occurring among a number of tribes, and yet there may be much that argues against it being in every instance a case of an invention with an origin common to them all. I may, for example, say a few words regarding different forms of pincers in South America. Pincers are used among the Ona and the Yamana for picking out of the fire hot objects like mussels, pieces of meat, etc. In large regions of western South America the Indians had, and still have, metal pincers for plucking out hairs of the beard. Pincers made from mussel shell, and used for the same purpose, are known from Araucania and Guiana, and, as I have mentioned, judging from their shape the mussel-shell pincers of Peru appear to have been the prototypes of those made of metal. [41] The Cuna, Chocó, Rama and Guatuso [42] use wooden pincers for picking out of the fire hot mussels, bananas, and such like. These (Fig. 12, *a*) are, however, different from the pincers used by the Ona and Yamana (Fig. 12, *b*). The latter two tribes use a split tree-branch for pincers, whilst the Chocó and the Indians of Central America employ a double-bent sliver from the stem of a small palm (?).

Garcilasso de la Vega [43] expressly states that the Incas used no pincers or tongs in their blacksmith-work, and pincers of the type mentioned above from the Ona, Chocó, etc., are not known from the regions of the Inca realm, nor from anywhere within the Amazonas area.

The pincers of the Chocó are probably of post-Columbian origin, seeing that the name those Indians have for pincers is the Spanish word "tenaza." As the mussel-shell pincers appear to be the prototype of the metal ones that the Indians used for plucking out the beard, it follows that the wooden pincers of the Ona and Yamana, with their entirely different form, size, and purpose for which they are used, can have no origin in common with those of Peru.

In America pincers must necessarily originate from three entirely different sources:—

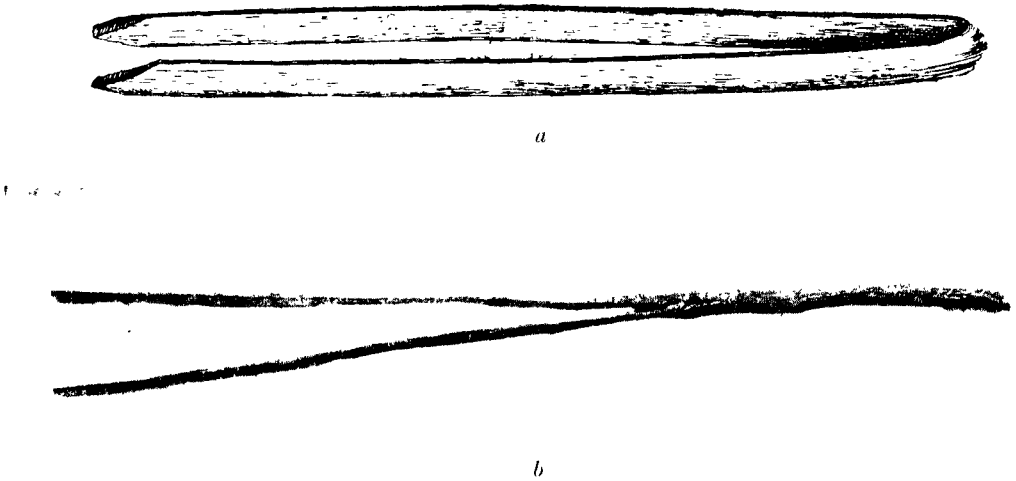
(1) The wooden pincers of the Ona and Yamana, whose origin is unknown:
(2) Mussel-shell pincers, subsequently imitated in metal:
(3) The wooden pincers of the Choco and Cuna, which are post-Columbian.

It will thus be seen that on any map showing the distribution of pincers in South America, it is necessary to indicate precisely what type of pincers it refers to.

Judging from the article under the heading of "Pincers" in the "Handbook of American Indians," it appears that many different types of pincers also are found in North America. In that continent it is even more difficult than in Central or South America to determine to what extent the idea of employing pincers may have been derived from the whites.

Of the greatest interest as regards the question of parallelism, and of the same inventions having been independently made at different times, is when we meet with an invention entirely, or almost entirely, confined to a small locality within a whole continent. An invention of this description is the pump, in Colombia. There it was met with at the time of the discovery, within a very restricted area where it was used for a quite specific purpose. Under these circumstances it is out of the question that there existed any connection between the Colombian pumps and those of the Old World.

Cieza de Leon [44] describes the Colombian pump in this way: "Farther on there is another village, called Coinza, past which run several streams whose waters are very peculiar. Here I noticed a certain thing (which I admired not a little), and that was that in these streams, and from the source supplying the water that runs in them, there were welling up salt springs, and into these the Indians, with great ingenuity, had put down hollow stems of the thick bamboo that grows in these parts, resembling ships' pumps, through which they raised the water they wished to obtain, keeping this water from mingling with the body of the river water, and from it they produced salt."



a

b

FIG. 12.—WOODEN PINCERS.

a, CHOCÓ INDIANS, PANAMA. ($\frac{3}{4}$.) *b*, YAMANA INDIANS, A FUEGIAN TRIBE.

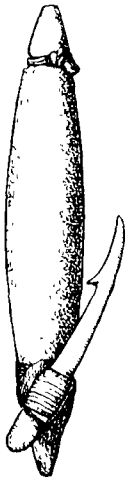


FIG. 13. BARBED FISH-HOOK OF THE VERY ANCIENT FISHING CULTURE IN ARICA, CHILE. ($\frac{2}{3}$.)

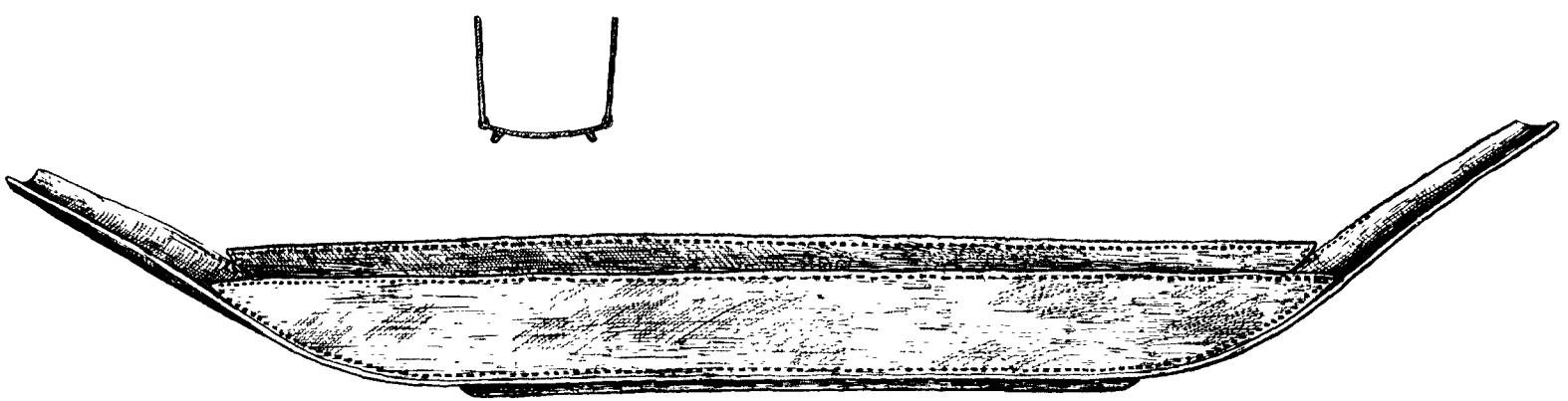


FIG. 14.—PLANK-BOAT, WITH RUNNERS TO FACILITATE DRAGGING OVERLAND FROM ONE WATER TO ANOTHER. FROM THE ALAKALOUF, A FUEGIAN TRIBE. ($\frac{1}{20}$)

If I have rightly understood Cieza de Leon, those salt springs ran along the bed of the river, that is to say, underneath the fresh water, and from there the Indians pumped up the salt water by means of bamboo water-pipes without getting it mixed with the river water. He says that these pumps were like those used on ships by the Spaniards. It is out of the question that the Indians had acquired the idea of this arrangement from the Spaniards, because at that time —middle of the 16th century—the district referred to was entirely unexplored.

Here we have before us an ingenious local invention which, judging from everything, had been devised on the spot, seeing that it was adapted to the singularly peculiar local conditions. Some gifted Indian had here most cleverly discovered a method of utilizing the salt water of the springs on the river bed. That this invention did not spread may safely be accounted for by its being devoid of purpose elsewhere than in conjunction with these extraordinary salt springs. The neighbouring tribes would have had no use for it.

The go-cart for children, which Koch-Grünberg [45] describes from north-western Brazil, does not appear to be known from any other part of America. Another local invention from the same region is the pronged cigar-holder (Fig. 2). Of the latter we know that it was invented in America. As regards the former, the same is also probable, because of its localized distribution in the interior of the South American continent.

Of very remarkable isolated occurrence in South America is the barbed fish-hook. Barbless fish-hooks are widely distributed, but only one hook provided with a barb has so far as I know been published from South America (Fig. 13); in fact, just from the very ancient culture in Arica, Chile, that first was described by Uhle [46]. Probably this is a case of an isolated invention that never succeeded in "making good" or spreading farther. It is quite possible that among primitive peoples, in that way inventions are made that perhaps are used for a time, but are subsequently forgotten. They do not spread, because of the Indians' disinclination to adopt novel ideas.

The Huari are a small tribe in Matto Grosso who, when, in 1914, I, accompanied by my wife, visited them, were still living in the stone age, and yet were the only primitive people in all South America with a knowledge of the chain [47] (Pl. XXIV, Fig. 1). Attempts at making chains consisting of a couple of links in gold, are known from pre-Columbian times from Ecuador, but in its true form the chain is not known either from the Incas, Mayas, or Aztecs. In this we evidently have a remarkable invention of isolated distribution.

The Yuracaré and the Chimané of Bolivia employ a peculiar method of affixing the feathers some distance from the nock on the arrow. [48] This invention, which they have all to themselves, they must have made during the last hundred years, because at the time of d'Orbigny's [49] visit to them their arrow feathers were fastened in a different manner.

Another interesting example of isolated distribution connected with a specific purpose is the following. We know that in the extreme north of North America, the Eskimo, and certain neighbouring Indian tribes, possess sledges with runners. [50] In all the rest of America the sledge fitted with runners is unknown.[1] One of the Fuegian tribes, the Alakalouf, possess, however, this vehicle in an embryonic stage, as their plank-boats are provided with runners in order to facilitate their being dragged overland from one water to another (Fig. 14). A plank-boat fitted with runners is a sort of sledge. As the runner-fitted sledge among the Eskimo no doubt is a comparatively late invention, it must be taken as probable that the Alakalouf in this respect present an independent invention made for a special purpose. The origin of the Eskimo sledge is, on the other hand, presumably to seek in the Old World. Many other examples similar to the above might be adduced.

As has already been pointed out by Max Schmidt [51], it is of great interest to study the form variations in such implements as have a two-fold purpose. An implement may at the outset have been used for a certain purpose and later for another, a procedure likely to entail modifications. Wegner [52] mentions an implement partly used as a digging-stick and partly as a pestle. Should for some reason or other it be used exclusively for one purpose, its form would probably be affected. The Indians on Lake Titicaca used triple-pointed poles that are used both as fish-spears and to punt their raft along. [53] It is not at all unlikely that it is the multi-pointed pole which has suggested the fish-spear. These poles are multi-pointed in order that they may be used in swamps, to punt their canoes along. It was natural that the Indians should try with these poles to have a thrust at any fish they might see. Then, if they migrated to a district where many-pointed poles were no longer needed, these poles lived on as fish-spears.

Lastly, in this connection, I wish to bring forward, as examples of the Indians' ability as regards inventions, a few minor achievements in that line made by them in post-Columbian times, on the basis of newly introduced culture elements or new raw material obtained from the whites.

In Patagonia, the Indians have invented a baby-carrier for use on horse-back [54], which is a modification of the ladder-like baby-carrier they previously used on foot. This is an invention they could not have borrowed from the whites. The horse being post-Columbian, this invention, too, must be post-Columbian. The Patagonian spur cannot but be an independent type, like the wooden spurs that formerly were used by the Mocovi, and in our days by, for example, the Ashluslay Indians (Pl. XXIV, Fig. 2, *a*) of El Gran Chaco, as well as by the Pima Indians (Pl. XXIV, Fig. 2, *b*) of North America. [55] In this case Indians of

[1] Sledges are quite well adapted for being used on other surfaces than ice and snow. In Sweden they are used, for instance, in Dalsland, for transportation of timber in the woods even in summer when the ground is bare.

different parts of America have, independently of one another, arrived at the same result. In California the Indians have invented a pump-drill with a movable disk, which supposedly is a modification of the type of pump-drill the Indians have seen the whites using. [56] The Tehuelche have modified the Spanish pack of playing cards according to their own particular taste. The Tapiete and the Toba manufacture cleverly contrived boxes of armadillo tails, which they use as containers for tinder when they strike fire with flint and steel, an art which they have learnt from the whites. These tinder-boxes must have been invented in post-Columbian times.

As is well known, snow-goggles and eye-shades are common among the Eskimo. In South America eye-shades are only known from the Karajá [57], who use them for protecting their eyes when staying on the sun-flooded banks of Rio Araguaya. These shades are plaited from palm leaves. In the mountain regions of Bolivia and Peru, where snow is very prevalent, the Indians do not know of any way of protecting their eyes, so that sun-blindness is consequently very common among them.

For protection against the sun the Karajá also use a kind of openwork woven hat. The plaited hat, where it occurs among the Indians of South America, always appearing to be an imitation of the hats of the whites, I suppose the same applies to those manufactured by the Karajá. In this case the eye-shade is nothing but an incomplete hat. It is typical that the eye-shade is unknown to the more isolated tribe of the Šavajé. Neither does Krause mention the hat from these people. Hats manufactured by Indians I have seen among the Mojo, Churapa and other tribes in Bolivia, and among the Bogotá on the Isthmus of Panama. Such hats are, among others, also made by the Motilones. This tribe decorate their hats with feathers. All these tribes have learnt from the whites how to make plaited hats. Hats are not known from any tribe uninfluenced, or but slightly influenced, by the white man's civilization. Nowadays civilized or half-civilized Indians are everywhere seen wearing hats which they have bought at the white men's stores. But to them the hats are, first and foremost, an ornament which is not used in hunting or fishing or generally in their daily avocations.

The occurrence of the eye-shade among the Eskimo and the Karajá furnishes us with a good illustration of double occurrence where we are able to show that no connection exists between the two areas of distribution. Here the Karajá, influenced by something that they have learnt from the whites, have achieved an independent invention.

With all possible reservation in case I should be wrong, I wish to put forward a few observations that appear to point to the Indians having in post-Columbian times invented a particular kind of sugar-cane crushing mill.

Sugar-mills of the type I here reproduce (Pl. XXV, Fig. 1) are fairly widely distributed in Central America and northern South America. They are especially

common in Guiana [58]. Personally I have seen mills of this kind in the Isthmus of Panama among the Cuna and a small Indian tribe, the Chama, on Rio Madidi in the border regions between Peru and Bolivia, who shortly prior to my visit among them in 1914 had concluded a peace treaty with the whites. Sugar-cane presses of the same type have been observed by Tessmann [59] among the Pano-speaking Indians on the lower reaches of Rio Ucayali.

We know that the Indians first received the sugar-cane from the whites. One is therefore apt to suspect that it is from them they got to know the sugar-mill of this kind; nevertheless I have never seen mills of this sort in use among the whites. And Dr. Roth, the eminent expert on the ethnography and history of Guiana, is of opinion that the Indians did not receive them from the whites. In a letter to me he writes as follows:—

> "Of course from the historical point of view there is no doubt that the Spaniards (commencing with Columbus) introduced sugar culture, but it by no means follows from this that they introduced the hand-mill you mention, which can only be served by a length of say 4 to 6 feet of cane at a time. It surely would require dozens and dozens of such mills, and an incalculable number of slaves, Heaven knows how many weeks, to squeeze the sugar from out of even a small-sized plantation."

As against this, Mr. Roth is inclined to believe that the Indians have received these sugar-mills from the negroes, seeing that they are commonly used by the bush negroes. The prominent African specialists Seligman and Lindblom have, however, written me to say that sugar-mills of this type are not met with among the negroes in their own continent. Neither are similar sugar-mills, according to Seligman, known from New Guinea or elsewhere in the whole of Melanesia.

Thus it only remains that they must be autochthonous to America, and that they have there been invented by Indians in post-Columbian times when they became acquainted with the sugar-cane through the whites.

It is also interesting to note who are the Indian tribes that, since they have come into contact with the whites, have begun to use arrow-points made of iron. Those whom I know from my own experience are the Toba, Choroti, Ashluslay and Mataco, who have arrow-heads partly of knife-blades and partly of wire. More rarely the Chiriguano, the Pauserna and the Bogota, too, have their arrows pointed with iron.

Apart from the above, in the Gothenburg Museum we have iron-pointed arrows from the Motilones, Chimila, Baniwa, Goajiro, and others.

Of the above-mentioned tribes the Motilones have iron points on the majority of their arrows.

A study of this matter will reveal that many tribes who have had only very slight contact with whites, such as the "Bugres" in southern Brazil and the Umotina [60] of Matto Grosso, have their arrows pointed with iron, whilst other

tribes who are, and long have been, in contact with whites never use iron points on their arrows. Iron points have evidently been adopted, here and there, by many tribes, and they have as a rule done so independently of one another. By different methods they have solved the problem of fastening the iron point to the shaft. The Motilones fix the arrow-head by means of a hole pierced through it, whilst other Indians, as for example the Chaco tribes, insert the iron point into the shaft, and then overlay the joint with a winding of thread. Occasionally a special binding is employed in order to guard against the precious point getting lost even if it becomes detached.

The Fuegian tribes were unacquainted with the stone celt. Nowadays their tools are exclusively made of iron, in part being manufactured out of scrap iron, and all hafted by the Indians themselves. The Riksmuseum at Stockholm possesses an axe of this kind, consisting of a piece of iron to which a handle has been fitted, originating from some Fuegian tribe, probably the Yamana (Pl. XXV, Fig. 2). It is interesting to note that the Fuegians have hafted this axe in the same manner as the Guayaki, Bakairi and others haft their stone celts. The method of hafting is very simple, but nevertheless of great interest in case they have independently conceived the idea of this method, which must have been unknown to them.

In this connection I wish to recall the fact that the Fuegian Indians after contact with the whites have not changed the material of their arrow-points from flint to iron but from flint to glass.

The Yuracaré have invented a very clever device for hafting bits of iron into knives with the edge set adze-wise (Pl. XXV, Fig. 3), in ingenious imitation of the hafted teeth they had previously used. From cow-horn the Chiriguano, the Indians of Guiana, and other tribes have made trumpets, the Choroti tinder-boxes with cleverly attached lids of calabash, and the Quichua receptacles for the lime that is chewed with coca. Of more common occurrence are direct imitations. In the Gothenburg Museum we have, from the Mataco-Vejos and the Huari, pieces of iron hafted by the same method as formerly were the stone celts of those tribes. Copying in this way was very extensively resorted to when the Indians of western South America passed from the stone age into a copper and bronze age.

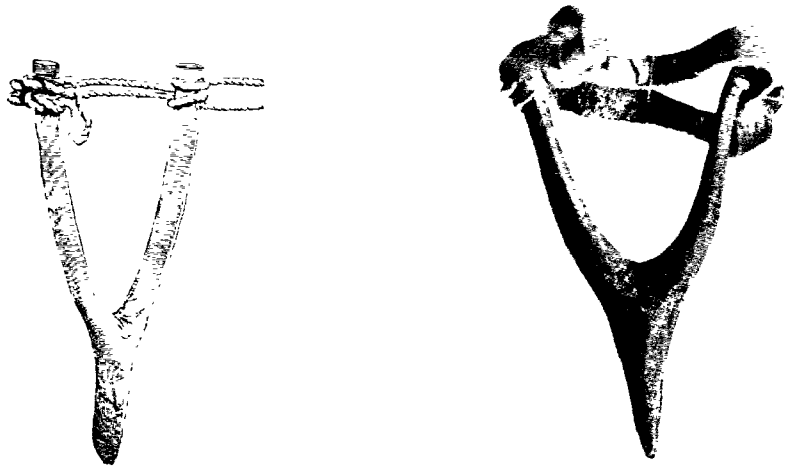
Many other examples could be adduced in illustration of Indian capacity for making inventions, but I must content myself with those I have already brought forward. In a work I am now preparing,[1] I am dealing with this subject in a more comprehensive manner. In that I shall also find occasion to give a detailed account of Indian culture loans.

In conclusion, to summarize what I have said in the foregoing, I think we must admit that the Indians' contribution—as discoverers and inventors—to the

[1] *Comparative Ethnographical Studies*, vol. 5.



FIG. 1.—HUARI WOMAN, MATTO GROSSO. THESE INDIANS ARE THE ONLY PRIMITIVE PEOPLE IN SOUTH AMERICA WITH A KNOWLEDGE OF THE CHAIN.



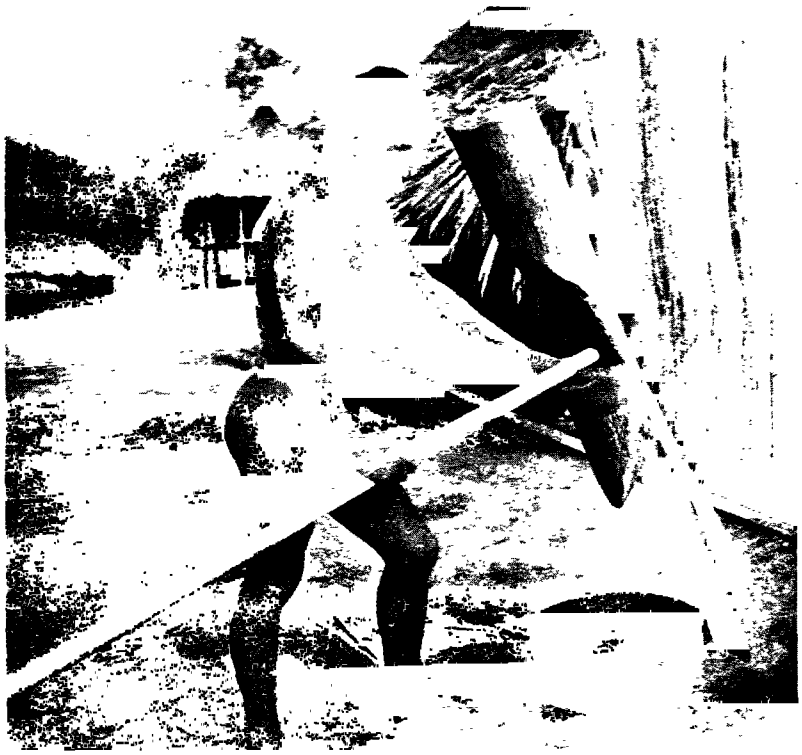
a *b*

FIG. 2.

a. WOODEN SPUR USED BY THE ASHLUSLAY INDIANS OF EL GRAN CHACO. ($\frac{1}{3}$.)

b WOODEN SPUR USED BY THE PIMA INDIANS OF NORTH AMERICA.

(AFTER RUSSEL.)



[*Photo Thalan*

FIG. 1.—PATAMONA INDIAN WITH SUGAR-MILL. BRITISH GUIANA.

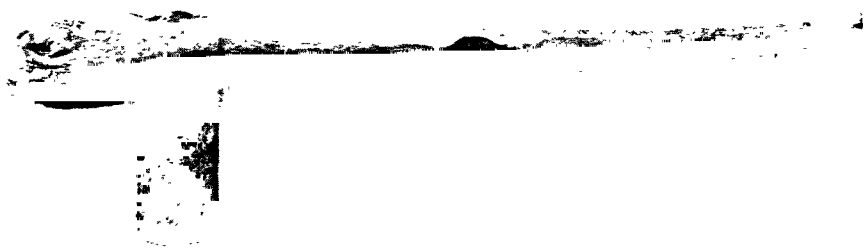


FIG. 2.—FUEGIAN AXE, CONSISTING OF A PIECE OF IRON FITTED INTO A HANDLE.

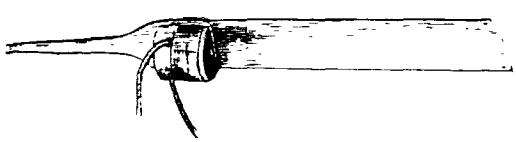


FIG. 3.—IRON KNIFE FROM THE YURACARE, BOLIVIA. ($\times \frac{1}{3}$.)

THE AMERICAN INDIAN AS AN INVENTOR.

cultural progress of man is considerable. It is a proven fact that the Indians have achieved many discoveries and inventions that in pre-Columbian times were unknown in the Old World. They have invented many things that are adaptations to exceptional geophysical conditions. They have, further, made a number of inventions in connection with culture elements that in post-Columbian times have been introduced to them by whites and negroes. Many inventions have in America such an isolated area of distribution that they may properly be supposed to have been made there. Seeing that the Indians have discovered and invented a great deal that was unknown in the Old World at the time of the discovery of America, it does not seem unreasonable to wonder whether they may not also have invented something or other that also was known there. The actual fact of their having done so is proved by its being possible to trace several inventions of that class from their simplest to their most elaborate forms. In the case of certain very important inventions it can be shown that in America they were in all probability preceded by simpler devices founded on the same principles.

Lastly I wish to say that we must from our experience collect all that we actually know as regards inventions and culture loans, so that we may possess a sure foundation on which to build further, if we propose to study cultural intercourse between the New and the Old Worlds, or even within the continent of America, as well as between other parts of the globe. We have to bear in mind that the question of independent inventions and culture loans is a much more complicated one than certain ethnographers would appear to think, to whom the mere occurrence of a number of similar culture elements in two separated areas suffices as evidence of cultural community. We must not simplify the problems too much, for then we run the risk of having to do it all over again.

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[34] W. J. McGee.—*The Seri Indians*. Seventeenth Annual Report of the Bureau of American Ethnology, p. 184. Washington. 1898.
[35] Gonzalo Fernandez de Oviedo y Valdes.—*Historia general y natural de las Indias*, vol. III, p. 574–5. Madrid. 1851–5. "No se cargan aquellos indios en las espaldas, como los de la Nueva España, sino con balanças en un palo, como se dixo que lo acostumoran en la provinsia de Cueva ó en Castilla del Oro, en los hombros, é llevan la carga ó parte della mejor dicendo una atras é otra adelante, en un palo ligero de si mesmo, tan grueso como la muñeca del braço o mas, e partida la carga en dos partes, é cada una atada quassi al cabo de aquel baston, cerca de las puntas dél, e cuelga una red con la mitad del pesado de la una parte e otra de la otra, y en el palo sus maneras, donde andas asidas aquellas redes."
[36] Lionel Wafer.—*A New Voyage and Description of the Isthmus of America*. (First edition, London. 1699.) Cleveland. 1903.
[37] Oviedo, *l.c.*, vol. 2, p. 274.
[38] Oviedo, *l.c.*, vol. 3, p. 575.
[39] Oviedo, *l.c.*, vol. 3, p. 574.
[40] Erland Nordenskiold.—*Om Indianernas Användande av Gummi i Sydamerika*. (Geografisk Tidskrift. Kobenhavn. 1917.)
[41] *Comparative Ethnographical Studies*, vol. 4, p. 149.

[42] E. Conzenius.—"Die Rama-Indianer von Nicaragua." *Zeitschrift fur Ethnologie.* 59 Jahrgang.

[43] Garcilasso de la Vega.—*Comentarios reales, que tratan del origen de los yncas.* Libro II. cap. xxviii. Lisboa, 1609.

[44] Pedro de Cieza de Leon.—*La crónica del Peru.* (Biblioteca de Autores Españoles. T. xxxvi: Historiadores primitivos de Indias. T. ii. Madrid, 1862). p. 387: "Mas adelante esta otro pueblo llamado Coinza, y pasan por el algunos rios de agua muy singular. Y noté en ellos una cosa que vi (de que no poco me admire), y fué que dentro de los mismos rios, y por la madre que hace el agua que por ellos corre, nascian destas fuentes salobres, y los indios con grande industria tenian metidos en ellas unos canutos de las cañas gordas que hay en aquellas partes, a manera de bombas de navios, por donde sacaban la cantidad del agua que querian, sin que envolviese con la corriente del rio y hacian della su sal."

[45] Theodor Koch-Grunberg.—*Zwei Jahre unter den Indianern.* Berlin. 1909–10.

[46] Max Uhle.—*La Arqueología de Arica y Tacna.* (Boletin de la Sociedad Ecuatoriana de estudios históricos Americanos. Quito, 1919.)

[47] Erland Nordenskiold.—*Forschungen und Abenteuer in Südamerika.* Stuttgart. 1924.

[48] *Comparative Ethnographical Studies.* vol. 3. p. 46.

[49] Alcide D'Orbigny.—*Voyage.* vol. 3. Paris. 1844. (Atlas. vol. 8. Paris. 1847.) Costumes. No. II.

[50] Kaj Birket-Smith.—*The Caribou Eskimos.* vol. ii. p. 71. "Report of the Fifth Thule Expedition." vol. v. 1921–4.

[51] Max Schmidt.—*Zeitschrift fur Ethnologie.* 1918. p. 12.

[52] Richard N. Wegner.—*Die Quraguna.* "Phonix." Buenos Aires. 1928.

[53] M. Neveu-Lemaire.—*Los lagos de los altiplanos de la América del Sud.* p. 75. (Traduccion Española.) La Paz. 1909.

[54] R. Hauthal.—*Ueber eine Kindertrage der Tehuelchen im südlichen Patagonien.* Atti del XXII Congresso internazionale degli Americanisti. vol. ii. Roma. 1928.

[55] Frank Russel.—*The Pima Indians.* 26th Annual Report of the Bureau of American Ethnology. 1904–5. Fig. 21. Washington. 1908.

[56] J. D. McGuire.—*A Study of the Primitive Methods of Drilling.* Report of the U.S. National Museum. 1894. p. 737. Fig. 176. Washington. 1896.

[57] Fritz Krause.—*In den Wildnissen Brasiliens.* Leipzig. 1911.

[58] Walter Roth.—*An Introductory Study of the Arts, Crafts, and Customs of the Guiana Indians.* 38th Annual Report of the Bureau of American Ethnology. Washington. 1924.

[59] Gunter Tessmann.—*Menschen Ohne Gott.* Stuttgart. 1928.

[60] Max Schmidt.—"Ergebnisse meiner zweijahrigen Forschungreise in Matto Grosso." *Zeitschrift fur Ethnologie.* Berlin. 1929. p. 116. "An ihren Kriegspfeilen pflegen die heutigen Umotina am vorderen ende eine Messerspitze zu befestigen. Sobald sie irgendein Taschenmesser oder sonstiges Messer erhalten, wird die Scheide vom Stil losgelost und zur Pfeilspitze verarbeitet."

SOME COLLECTIVE EXPRESSIONS OF OBSCENITY IN AFRICA.

By E. E. Evans-Pritchard.

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I.—Introductory Note.

It is not uncommon for those who live amongst primitive peoples to come across "obscenity" in speech and action. This "obscenity" is often not an expression by an individual uttered under great stress and condemned as bad taste, but is an expression by a group of persons and is permitted and even prescribed by society. Some Europeans apologize for introducing us to such indecency, but at the same time give us a full and unbiassed account: also they may even, like Junod, and Smith and Dale, attempt to explain these "indecencies."

Most Europeans, however, though unable to see the "obscenities" in their own society, perceive "obscenities" amongst the natives, because they are strange to them, and they forthwith condemn them. The grounds of condemnation appear to be that such "obscenities" offend the moral sense of white men. Amongst such critics, needless to say, there is no attempt at explanation. In consequence, these "obscenities" are stigmatized as being anti-social and are commonly legislated against. They are said to be "ultra-bestial," or "too infamous to bear repetition."

It is my object in this paper to bring together some of the better documented accounts of these "obscenities" which occur in Africa, so that we can study our Zande[1] data, not as isolated instances, but in comparison with a whole range of similar social facts.

[1] This paper originally formed part of a thesis for Ph.D. in the University of London on "The Social Organization of the Azande of the Bahr-el-Ghazal Province of the Anglo-Egyptian Sudan." The Sudan material was gathered on an expedition, 1926–7, carried out on behalf of the Government of the Anglo-Egyptian Sudan. Additional financial assistance was given by grants from the Royal Society and the Laura Spelman Rockefeller Trustees.

II.—Obscenity Amongst the Ba-Ila.

Amongst the Ba-Ila of Northern Rhodesia,[1] "The occasion when lewd songs are not only permitted but are regarded as essential to the ritual, are at sowing time, at the *kwando* fishing; when a new canoe is taken to the river to be launched; when smelting iron, at initiation, and at funerals and the *nalubo*. They are also employed in the *kashamba* dance." (ii. p. 191.)

In sowing, smelting, fishing and launching canoes erotic songs are associated with a joint economic activity; on the other occasions mentioned they are associated with religious ceremonial.

But though Smith and Dale give us the economic occasions of these erotic songs, their accounts often lack descriptive detail. With regard to sowing, we are told that the wife, "assisted by the members of her household (she), starts to hoe the ground, stacking the grass and rubbish in large heaps until dry enough to burn, her husband meanwhile hoeing his own little patch. As soon as the ground is hoed it is sown." (i. p. 137.) Sowing, therefore, seems to be a joint labour of the household, and the lewd songs are presumably sung by the women during the hoeing of the ground and the placing of the seed into the earth.

In the *kwando* fishing, men leave the villages and encamp on the river-bank. A large open-wove reed mat is used as a scoop, the men wading along in the river, pushing this mat in front of them and enclosing the fish, which are then scooped out. Here again we have a joint activity, apparently on a large scale, but we are not told the manner in which the songs form part of the undertaking. (i. pp. 161–2, 168–9.)

From the description of the making of canoes, and from a photograph of a finished specimen, it is obvious that to carry it to the river to be launched is a heavy task, and can only be carried out by a number of men working in co-operation. Here again we should like more detail as to how exactly the songs accompany the activity. (i. pp. 200–2.)

Smelting amongst the Ba-Ila is a long and important labour carried out under strict taboos. Trees have to be cut down and charcoal made from them, ironstone has to be dug up, water has to be drawn, and clay gathered and the kilns erected. The operations appear to be carried out by all the men in the villages living away from home in specially erected shelters. With regard to the erotic songs, we are unfortunately given no more information than that they accompany these operations.

"When our informant says that bad language is not prohibited, he is thinking specially of the songs that are sung during the operations, they are mostly of a lewd nature." (i. p. 208.) The authors give several examples of these songs, *e.g.* "*Shampala yamwandaka*" ["The man with the bare glans, it's all split, it has become of the spring, it makes him defecate"]. (i. pp. 207–8.)

[1] All references to the Ba-Ila are from *The Ila-speaking Peoples of Northern Rhodesia*, by the Rev. Edwin W. Smith and Capt. A. M. Dale, 1920.

The occasions of religious ceremonial on which licence is allowed are at initiation ceremonies, at funerals, and at the feasts in honour of the "divinities."

"On the occasions, especially in the *mwanda* and *chisungu*, connected with the initiation of the girls, both dances and songs are grossly obscene. There may be some hidden significance in them—that there is such attached to the songs we have already seen—but the apparent motive is to excite the passions to the highest pitch." In connection with the initiation of girls, we are also told: "The *chisungu* (dance) is kept up for two or three nights and days, and is the occasion for much unbridled licence." (ii. pp. 18–26.) Here also takes place the *kashimbo* dance.

During the feasts of mourning erotic songs are sung by the female mourners. Smith and Dale give several of these, *e.g.* :—

"*Ma! ma! ma! dzakomena itoni dzakwe!*
ndia mololobozho
kudzikwete kudilolobola."

["Dear! dear! dear! His great penis is a size! It is a thing without an end. It must have had a long unwinding."]

These authors go on to say: "When we have expressed our astonishment at women singing such songs—for it is the women that sing them—the elders have quoted a proverb, '*Ushidzikire taitwa ku busha*' ['A mourner is not to be passed before the face'], *i.e.*, he or she has licence to do whatever he or she pleases. Under ordinary circumstances it would be reckoned taboo for women to utter such things in the presence of men: but at funerals all restraints are removed—people do as they like. Grass may be plucked out of the thatched roofs, the fields may be robbed of the growing corn: all passions are let loose: and no complaint for damage, theft or adultery can be made" (ii. p. 113.)

Amongst the Ba-Ila, every "demi-god" or important ancestral spirit has at least one annual feast in his honour. This is called *ukuba* (pl. *nkuba*). What takes place at these festivals has been summed up by the authors: "There is a monotonous sameness about all the *nkuba*. There is always plenty of beer: much dancing and singing: charging up and down by men with their spears: lewd songs and a general licence. In many points the annual feast is comparable with the Saturnalia." (ii. p. 191.)

Before I give the data bearing on our problem from the Thonga nation, I will make a condensed analysis of the Ba-Ila material:—

(1) Licentious songs are normally not permitted by society.

(2) When they are allowed, it is at an important religious ceremony: or

(3) In connection with specially arduous or lengthy joint economic undertakings.

III.—Obscenity Amongst the Ba-Thonga.

We shall find that erotic songs and behaviour are allowed amongst the Ba-Thonga of the Transvaal[1] on much the same occasions as amongst the Ba-Ila, but it is often less easy to label the occasion as economic or ritual, as they are sometimes associated with labour carried out in connection with a ceremony.

In reference to the *ungi* or circumcision lodge, we are told that the most rigid sex-taboos must be observed by all the inmates, and that the people in the villages must make no noise and must have no quarrels. "Strange to say, in the meantime obscene language is permitted and even recommended—a contrast which we shall often meet with during the marginal periods. Some of the formulæ contain expressions which are taboo at other times: when the women bring the food to the *ungi*, the shepherds who receive it from their hands are allowed to address them with as many unchaste words as they like. The mothers themselves have the right of singing obscene songs when they pound the mealies for the *ungi*." (i, p. 80.)

"The law is that women, the mothers of the circumcised, must bring plenty of porridge, twice as much as is required for the boys. Should one of them fail to do this she will be punished at a given time. They deposit their pots at some distance so that they cannot catch any glimpse of the *ugoma*, and shout '*Ha tsa!*' ['We are burning.'] This means: 'Our heads are sore from having carried our pots such a long way.' Shepherds run to meet them, and answer with a great many jokes in rather dubious taste: 'We know what is burning with you,' etc. 'Is this not the rule of the *ugoma*?'" (i, p. 84.)

The secret formulæ of the initiates are often very obscene. If one wishes to know whether a boy has been circumcised, one says to him, "The beast which has been opened from behind," and if he has been initiated he will answer, "The crocodile" and will add "the knife which circumcises." He replies thus in reference to long secret formulæ which allude to the manner in which crocodiles copulate, and to how boys pierce a virgin's vagina to make a way for the older men who will follow them. The author considers many of these formulæ ugly enough to require translation into Latin.

We see that obscene songs and expressions are here associated with the important rites of circumcision, and that they also accompany the unusually great labour of pounding the large supply of mealies needed for the lodge.

Amongst the northern clans girls when they reach the age of nubility go through a period of seclusion. "Then will begin a seclusion period of one month. Three or four girls receive the initiation together . . . Every morning they are led to the pool, and their whole body is immersed in water as far as the neck. Other initiated girls or women accompany them, singing obscene songs, and drive away with sticks

[1] All references to the Ba-Thonga are from *The Life of a South African Tribe*, by Henri A. Junod 1927. 2nd ed.

any man who happens to be on the road, as no man is allowed to see a girl during this period. If a man happens to come near the group, the women ask him the secret formulæ of the circumcision school, not the long ones, but the short ones, probably those which contain licentious words. . . . When the *cortège* of women accompanying the initiated has returned home, the nubile girls are imprisoned in the hut. They are teased, pinched, scratched by the adoptive mothers or by other women; they must also listen to the licentious songs which are sung to them." (i. p. 177.)

Two or three months after someone has died, the Ba-Thonga hold a ceremony at which the whole of the family of the deceased is present, and in which the mortuary hut is broken down. Part of the ritual consists in the killing of a goat and some hens. "Then, while the *butakulu* and the old men were busy with the victims, cutting them up and squeezing the *psany* (half-digested grass) out of the bowels, the other mourners began to sing and to dance. First an elderly woman, of a very clear complexion and a Mephistophelian face, very tall, with a curiously licentious smile, came into the middle of the place, opened her arms wide and *suma* (began to sing). Together with her song she performed a strange mimicry with her thighs. This mimicry took on a more and more lascivious character: it became a regular womb dance, so immoral that the men dropped their eyes as if they feared that she would take off all her clothing. . . . The words of her song were also of a very questionable character. She described an adulterous woman going during the night from one hut to another, seeking for lovers, knocking on the walls. . . . This seems very immoral indeed. Let us remember, however, that, in the opinion of the Thongas, these songs, which are taboo in ordinary life, are specially appropriate to the mourning period. 'These women have been uncovered by the death of their husband' said Mboza. There is no longer any restraint on them. They are full of bitterness when they perform these lascivious dances. The reason is perhaps deeper, as it is not only the widows who sing these words. We are still in a marginal period, the period of mourning, and these phases of life are marked for the Bantus by this strange contrast: prohibition of sexual intercourse and a shameless outpouring of impure words and gesticulations."

Amongst all African peoples the building of a new home is perhaps their greatest economic task; also it is often accompanied by religious ceremony. Amongst the northern clans of the Thonga nation there is a special period of moving from one village to another, of about a month in duration, during which the most irksome taboos have to be observed.

"When all the walls are ready, the roofs are carried from the old village to the new by all the men together. They lift each roof on to their shoulders, after having removed the old grass, and go out of the village, not by the main entrance, but by one of the back gates which has been widened for the purpose. A broad road has been prepared through the bush. They follow it, marching as fast as they can, and

singing the obscene songs which are reserved for special occasions. In these they insult the women who accompany them carrying the baskets, the mortars, the pestles. 'The village is broken in pieces, so are the ordinary laws. The insults which are taboo are now allowed' (Mboza). This suspension of morality in speech is only allowed on the day when roots are carried to the new village. Some days later, again, the women will take their revenge, when they smear the floor of the huts; then they, too, will sing their songs, insulting the men. But all this is done in fun. It is a great day of rejoicing for the '*tonono*,' who tease each other as much as they like. A man may be wanting in respect even to his great *mukondanu* on these days!'" (i, p. 321.) "Amongst the Ba-Thonga these songs are not allowed when only one hut is being transported." (i, p. 314.)

Though ceremonial acts begin and conclude the building of a new village, the activity is an economic rather than a ceremonial one. On the two occasions on which the obscene songs are sung, it is in carrying out the tiring and unpleasant labour of transporting the heavy roofs of the huts or in smearing the floors—both acts of joint labour.

In a period of prolonged drought amongst the Ba-Thonga a sacrifice is first made to the spirits. "Then the women assemble. They must remove all their clothing, only putting some grass round their loins, and, with a peculiar skipping step, singing a special song: '*Mpfula, mvua!*' ['Rain, fall!']. They go to all the spots where children prematurely born have been buried in dry ground, on the hills, take away what they find in the broken pots, and collect all that impure matter in a secret place so that children may see nothing of what they are doing. Water is poured on these graves in order to 'quench them' (*timula*). On the evening of the same day they go and bury these impurities: this is done in the mud near the river. No man must approach during this operation: the women would have the right to strike the imprudent one, and ask him questions on the obscene formulæ of circumcision: the man would answer in the most impure words he could find, as all language taboos are suspended on that day: nakedness even is no longer taboo, because, says Viguet 'it is the law of the country!' Everyone consents to the suspension of the ordinary laws!'" (ii, p. 318.)

Thus we see that the ceremony to make rain fall is characterized by obscenity in speech and nakedness, which is strictly forbidden in everyday life.

The last Thonga ceremony to be described is that of the *nwa*. The *nwa* is an insect pest which causes great havoc to the beans and maize. The chief men of the country send the women to pick the insect off the bean-stalks, and a girl, who is one of twins, goes to throw them into the neighbouring lake. "Behind her marches the whole crowd of women—arms, waists and heads covered with grass, carrying branches of the big-leaved manioc, which they wave from side to side, and singing. . . ."

When the twin has thrown the insects into the water, "Then the savage yells are raised louder than ever, and the women sing their impure songs (*ta ku raketela*).

which they would never dare to utter on ordinary occasions, and which are reserved for these ceremonies, rain-seeking and *mvua*-hunting." (ii. p. 449.)

If we analyse these descriptions of licentious behaviour we shall find :—

(1) As amongst the Ba-Ila these specific forms of obscenity in song, speech, and action are not ordinarily permitted by society.

(2) When they are allowed, it is at an important ceremony, in connection with the rites of circumcision of boys and the initiation of girls, at the funeral feasts, and at the rain and *mvua* ceremonies : or

(3) In connection with some arduous or lengthy economic undertaking, in the joint labour of carrying the roofs or smearing the floors in the building of a new village, and in the one woman (possibly joint) labour of pounding the mealies for the circumcision lodge.

IV.—Obscenity Amongst the A-Kamba.

I do not wish to overload this paper with quotations, but we must note the data bearing on the subject of obscenity in Lindblom's excellent treatise on the A-Kamba of Kenya, East Africa.[1]

Amongst the A-Kamba, the boys and girls go into the initiation camp together. There they sing songs in connection with the rites of circumcision. "Some songs are sung alternately by boys and girls, and they are extremely obscene. One of them runs as follows :—

"The boys—

'Hae, hae, listen !
The *kino* (female pudenda) is a fool :
She dwells in the clothes.
Hae, hae ! '

"The girls answer—

'You say, "Eeh, listen ! "
The *kea* (male pudenda) is a fool.
It dwells among the testes,
And is a fool
To allow the *kino* to drink fat.'

The meaning is that, by much sexual intercourse, the man grows lean, while the woman thrives on it. Like the songs, the conversation also is of a very dubious nature, and according to my informant is directly intended to show that no feelings of shame exist under these circumstances, though in daily life considerable modesty is shown in connection with such matters" (p. 50.)

[1] All references to the A-Kamba are from *The Akamba in British East Africa*, 1920.

In behaviour as well as in song is obscenity prescribed. Each of the initiates in the second circumcision ceremonies must hold up his penis until erection ensues. A lump of wood is then bound to the member, and in this condition he marches round amid roars of laughter. In the same ceremonies a small hole is scooped out in the ground, and each of the initiates in turn has to ejaculate into the hole, which represents the vagina. Also each of the initiates has to copulate with another to show how he performs the sex act with a woman. "The songs are of an indescribable lewd content." There is a general licence, and the initiates, armed with sticks, make a terror of themselves in the whole countryside. (p. 65.)

In times of drought the A-Kamba women perform a ceremony like that described by Junod for the Ba-Thonga. They beat their drums and march from village to village, and then in a combined force proceed to the medicine man.

Lindblom met the women on the march in 1911, and took down some of the songs which they were singing, such as—

"Ea, eeh!
We come from afar
To find salt for the *kino* (female pudenda).
Penis erigitur.
Uh, uh!"

He translates this song freely as "We come to get rain, so that we can get food for our husbands, who cannot accomplish their sexual duties if they are weak from hunger."

Lindblom says that the circumcision songs are stereotyped all over Ukamba and are of considerable age, whereas the ordinary song is localized and short-lived. He does not say whether the rain ceremony songs are handed down from generation to generation or not (p. 276).

Amongst the A-Kamba we find also :—

(1) That certain collective expressions of obscenity of a type usually prohibited by society are

(2) Permitted on the ceremonial occasions of circumcision and rain-making.

V.—Obscenity Amongst the A-Zande.

I became interested in this problem of prescribed obscenity when I found myself among the A-Zande of the Bahr-el-Ghazal Province of the Anglo-Egyptian Sudan.[1] The A-Zande have some very obscene songs which they regard as highly improper and offensive, except when they are sung in their socially determined context. Some years after the death of a man or woman the relatives of the dead give a feast, so

[1] For a general account of the A-Zande, see Lagal—*Les Azandé*, 1926, and Larken "An account of the Zande," *Sudan Notes and Records* 1926, and "Impressions of the Azande," *id.* 1927.

that a heap of stones may be placed over his or her grave. Extensive preparations have to be made for this feast. In these preparations there are no greater labours than the women's work of beating a large quantity of millet and later grinding it in a malted form. The millet is needed to make many pots of beer, some of which is to be drunk at the feast, but most of which will be given away in a system of exchange between the master of the feast and his relatives-in-law.

After a religious ceremony in honour of the spirits of the dead the millet is piled up in the centre of the household court, and the women, relatives, and neighbours of the master of the feast begin to thresh it with long sticks. In doing this piece of labour they all march round and round the millet, singing obscene songs. These songs are the only songs which have been handed over from generation to generation, and which are known throughout the length and breadth of the country, all others being localized and living only a few seasons. They are sung with a fast rhythm, to the beats of which the women workers thresh the millet. In consequence their sticks all belabour the grain at the same time and at the same intervals. Generally there will be one or two women who act as leaders. These stand in the middle of the millet, lead the songs and make obscene bodily movements. I will give the reader some of these songs[1]: here is one of them:—

"*Na ta pumbe, wili mbia nenge ro yo.*
"Mother of the feast, little stone is in your vulva.

Ba semba la pumbe, wili mbia nenge ro yo.
Master of the ceremonies, little stone is in your vulva.

Agume pumbe, wili mbia nenge ro yo.
Relatives of the feast, little stone is in your vulva.

Wili kawili pumbe, wili mbia nenge ro yo.
Son of my brother of the feast, little stone is in your vulva.

A ta pumbe, wili mbia nenge ro yo."
All the people of the feast, little stone is in your vulva."

During the singing of such songs the men keep away from the work, as they fear to be insulted.

About a year after the millet has been threshed the feast is held. A few days before the feast the women grind the malted grain to make beer. Six to ten, or even more, grinding-stones are arranged in a circle under the shelter of a granary.

First, old men perform a religious ceremony in honour of the spirits of the dead, mixed with magical rites against witchcraft and to influence the ritual exchange of goods in the feast. When this is finished they begin to sing the best known of these songs, which can be sung at either grinding or threshing. After a few lines they leave the stones and the women come and take their place and

[1] I am indebted to Major Larken for first pointing out to me the existence of these songs. Only one or two examples are given here.

commence grinding. The flour falls from the stones and forms a large heap in the centre.

There are always one or two women who lead the singing. The work never stops, as those women who are singing will take the place of those who are tired at the grinding. Here again the work is done to the rhythm of the songs the women all moving their stones together to the rhythm in unison.

The song with which they begin the grinding goes thus:—

"*Oo-o, ngonga bi ngoto,*[1] *mongo ami e-e!*"
Oo! Oo! The vertical column of the uterus, valve. O—e— .

This line forms a main chorus throughout the song, which is composed of such lines as these:—

"*Kura o, kura o, mongo mi gembui re o.*"
Penis, O! Penis, O! Vagina is calling you."

or,

"*Agbia o, agbio, agbio bi kura ga zegio.*"
Relatives-in-law, O! Relatives-in-law, O! Relatives-in-law, put out the [illegible]

I only give a few lines, as the song is a long one.

In such songs as these, references to relations are allowed which are strictly forbidden at other times. The songs also are accompanied by obscene body gestures. The men keep well away from the women during this work.

I was told that when the new bridge was being built over the Sueh River in March of this year (1927), a lengthy and tedious piece of Government labour some of these songs were sung by the workers.

Obscene expressions of abuse are common amongst the A-Zande, as they are amongst ourselves, as aids to vituperation. But such expressions are certainly not prescribed, and frequently lead to disturbance and legal proceedings. On the other hand, the behaviour of the wives of a man when his sister's son has made a predatory raid on his belongings, for which according to native law, there is no redress, seems from one aspect to be a custom in the same category as those already described in this paper. These women tear off their grass covering from over the genitals and rush naked after the intruder, shouting obscene insults at him and making licentious gestures. We mention these occasions, but the obscenity though permitted is neither a prescribed nor a collective response.

There are also instances of prescribed obscenity at one, if not at more, of the secret societies of this Zande nation, but little is known about these associations. My own notes are inadequate to give a full account of the ceremonial of these associations, since, for obvious reasons, I did not wish to show too great an inquisitiveness, on my first visit into associations made illegal by the white man. Indecency amongst secret societies seems to be common enough and to be similar to that met with in the

[1] I am a little doubtful about the exact meaning of these words.

ceremonial of initiation, *e.g.* amongst the Wapare of East Africa, described in the *Jahrbuch des Städtischen Museums für Völkerkunde zu Leipzig*, 1913.

To summarize the Zande data :—

(1) Obscenity normally forbidden by society is sanctioned at certain times,
(2) as when millet is being beaten or ground by joint labour in preparation for the feasts of the dead.
(3) and in connection with the customs surrounding the mother's brother relationship, and in the ceremonial of secret societies.

There are possibly many other examples of obscenity amongst African societies, but extreme care has to be exercised in using material of this nature, as the account is often merely an opinion or impression of an untrained and prejudiced observer.

VI.—Obscenity Amongst the Lango, Didinga, Lugbwara and Ingassana.

I am very grateful to be able to supplement the data of this essay from the observations of such an unbiassed observer as Mr. Driberg. In his book on the Lango of Uganda, Driberg has described the obscenity which takes place at the ceremonies of twins, and he says (in an oral communication) that such songs are handed down from generation to generation in contrast to other songs which have only a seasonal existence. He suggests that they are probably taught at the female initiation schools. In both the male and the female initiation ceremonies of this tribe there are grossly obscene songs, and he found the same to be true of the rain ceremonies. In this last instance the songs are, as is so often the case, obscured by sexual symbolism, *e.g.* :—

> "*Kwaich obolo ibe te oduru.*"
> "The leopard lashes its tail under the fig-tree."
> [The penis lashes about under the female pudenda.]

Mr. Driberg also informs me that amongst the Didinga of the Anglo-Egyptian Sudan there is general obscenity in action and songs at the initiation ceremonies of both men and women. Amongst the same people the women sing erotic songs when building cairns near the cultivations, upon which they swear not to use the crops for their individual uses, but to keep them for the use of the clan. In building operations also girls sing licentious songs out of the hearing of men when engaged in cutting and carrying grass. (Oral communication.)[1]

Amongst the Lugbwara of Uganda, at the planting season, the men dance a special dance, in which the accompanying songs are erotic. At this dance the men deliberately reach a state of semi-erection of the penis. When a man is in this condition he makes a short run from the dance and comes back in a state of detumescence and repeats the performance. (Driberg, oral communication.)

[1] For an account of the Didinga *see* Driberg's forthcoming book *People of the Small Arrow*, and his paper "Didinga Customary law," *Sudan Notes and Records*, 1925.

I will add a note from my material, as yet unpublished, collected amongst the Ingassana people of the Fung Province of the Anglo-Egyptian Sudan. This people have a special corporation of players who dance and sing at ceremonies of marriage, birth of twins, and when children are suffering from some illness. Their performance is accompanied by much lewd side-play with wooden phalli. The songs also are probably obscene, in keeping with the general sexual associations of the ceremonial occasions.

VII.—Summary of Data and Formulation of Problem.

Our analysis of the occasions of prescribed obscenity amongst the Ba-Ila, Ba-Thonga, A-Kamba, and A-Zande may now be supplemented from the notes of Driberg and myself collected in Uganda and the Anglo-Egyptian Sudan.

Firstly, we must emphasize the fact that these types of obscenity are normally prohibited. They are considered by the people themselves as very improper, and at any other occasion than the few permitted ones an effective ban is placed on their manifestation. They belong to that part of mental life which society stigmatizes as coarse and vulgar, and which must be repressed by the individual. On rare occasions, however, such exhibitions are not only permitted, but even prescribed by society. In an analysis of these occasions lies the road to an explanation of the function of the types of erotic behaviour described in this paper.

We found that at certain ceremonies, which we may describe as magico-religious ceremonies, obscenity is permitted :—

Initiation Ceremonies (Ba-Ila, Ba-Thonga, A-Kamba, Lango, Didinga).
Funeral Ceremonies (Ba-Ila, Ba-Thonga).
Feasts in Honour of the Spirits (Ba-Ila).
Rain Ceremonies (Ba-Thonga, A-Kamba, Lango).
Ceremony for the Protection of the Crops from Pests (Ba-Thonga).
Theft from the Mother's Brother (A-Zande).
Secret Societies (A-Zande, Wapare, etc.).
Ceremonies of Twins (Lango, Ingassana).
Marriage and Illness of Children (Ingassana).
Ceremony to Protect the Crops (Didinga).
Sowing Dance (Lugbwara).

The second group of occasions on which we found obscenity permitted had its characteristic of arduous, lengthy and joint labour. It is impossible to make clear-cut distinctions between these two groups, for many occasions which we have considered as ceremonial have economic associations, *e.g.* the rain ceremonies. Also many of the acts of labour take place in a ceremonial cycle, *e.g.* the beating and grinding of the millet amongst the A-Zande. If we use the term "ceremonial" in its widest sense, then all the occasions of obscenity given in this paper may be called

"ceremonial occasions." But it will be found convenient to make a sub-group comprising those obscenities which actually accompany acts of labour.

Such obscenities are found accompanying *sowing, smelting, fishing, launching canoes* (Ba-Ila); *pounding mealies, carrying roofs of huts, smearing floors of huts* (Ba-Thonga); *threshing, grinding, carrying stones in government labour* (A-Zande); *building cairns* (Didinga); *cutting and carrying grass* (Didinga).

In attempting to explain these obscenities, I shall first attempt to suggest why the prohibitions of society are relaxed on any of the above-mentioned occasions. I shall then suggest what purpose their relaxation serves on ceremonial occasions, and lastly what is its economic rôle in labour. I shall thus follow in explanation the analysis which has been made from the data brought together. For I believe that the correct method in interpreting any element of culture is by describing it in terms of a generalization by reference to which any specific occurrence of the element in the life of the society is explained. At the same time the element of culture in question will be found in many different contexts and associated with many other different elements of culture, and the significance of its association will be understood only by an analysis of each specific context. Consequently an element such as the one which we are examining in this paper may have an indefinite number of social functions, but there is one common functional characteristic of them all.

Before we give our own explanation we shall, however, give consideration to the explanations put forward by two of the authors from whose works we have borrowed most of our material for this essay.

We want to explain how certain actions normally taboo are on occasions prescribed modes of collective expression.

VIII.—Social Function of Prescribed and Collective Obscenity.

How are we to explain this prescribed obscenity? Smith and Dale give an explanation which arises from a somewhat mystical account of the so-called dynamism of the Ba-Ila, by which they mean all the magical and religious ideas which are found amongst that people. They tell us that the songs are used, must be used, when the dynamic forces are intimately in evidence, and they conclude, "In normal times the abnormal is taboo, but in abnormal times the abnormal things are done to restore the normal condition of affairs." (ii. p. 84.)

This explanation, like the conception of dynamism, appears to be a little mystical, and I certainly cannot understand the conclusion. In any case, I do not think that launching a canoe, sowing, and fishing, though seasonal events, should be thought of as abnormal.

The theory held by Junod, and also apparently by Lindblom, is derived from the work of Van Gennep, which is embodied in his *Les Rites de Passage*. According

to this theory these obscene songs may be attributed to the fact that they occur in "marginal" periods which occur between rites of "segregation" and rites of "aggregation." Thus, for example, in the building of a new village there is amongst the Ba-Thonga a "marginal period" of one month or more during which the ordinary laws are suspended and many special taboos are enforced. These prescribed acts and songs of obscenity are made to emphasize the suspension of the ordinary laws in the "marginal periods" in passage rites. Hence also we find similar obscenity at similar occasions as in the *rites de passage* of initiation and funerals.

The objections to this explanation as a generalization are obvious: it covers only a few of the facts which I have brought together in this paper. The rain and *nunu* ceremonies described by Junod himself are not passage rites, or at least not in the accepted sense of the phrase. Certainly beating of eleusine and grinding of malted grain amongst the A-Zande, sowing and fishing undertakings, or the *makubi* ceremonies amongst the Ba-Ila are not passage rites.

So we cannot accept the theory that these obscenities have the function of creating a normal condition of affairs in an abnormal situation (Smith and Dale), nor that they have a directly opposite function of creating an abnormal period between ritual acts of "segregation" and "aggregation" (Junod).

However, we shall bear in mind the just observations of both these authors, that the obscenity takes place often in abnormal times, *e.g.* drought, and often during passage periods, *e.g.* initiation, but we will attempt a more comprehensive explanation than they have done.

The explanation which I wish to put forward to account for these specific acts of obscenity is a very simple one. To my mind there is, in one respect, an identity of social function between the taboo, or special prohibition, and these acts of special licence.

What is a taboo? In the terminology of Religion given in *Notes and Queries on Anthropology*, we are told that "taboo should be limited to describe a prohibition resting on a magico-religious sanction." And, again, we are told that "various other prohibitions are observed in uncivilized society, *e.g.* Legal Prohibitions, put forth by authority: and Customary Prohibitions which appear to rest simply on social disapproval: but the term taboo should be restricted as above." (p. 262, 4th ed.)

There are several reasons why this mode of definition is an unsatisfactory one. To give only one of these reasons, essentially similar prohibitions in different societies would be classed into different categories according to the different political development of each society. It is always difficult to tell where the sanction of a prohibition lies, and the same prohibition may have its sanction in social disapproval and in political authority as well as in magico-religious forces. How, for instance, is one to class the prohibition of incest? Has it a magico-religious sanction, or is it put forth by authority, or does it rest simply on social disapproval? Surely this depends on the specific development of each society.

I do not think that a taboo should be treated in this way as a separate entity identified by its sanction, but should always be regarded as a prohibition which forms part of some social activity. Its sanction will generally be found to rest in the social activity itself, *e.g.* if a food-taboo or a sex-taboo is broken before a fishing expedition, no fish will be caught; if a taboo is broken before a magical performance the magic will not attain the end towards which it is directed.

Now it is commonly overlooked that the taboo looms large to the native and derives its social importance not because something or other is prohibited, but because that something or other is part of his daily life, a routine activity or a habit, *e.g.* the taboos on sexual intercourse and on certain foods or drinks. It is for the reason that the native is prohibited from doing what he habitually does as a matter of course, that his attention is focussed on the activity with which the prohibition is associated. In this manner the importance of activities of social value is impressed upon the mind of the individual. This I regard as one of the main functions of the taboo.

We may look at those prohibitions which concern persons from the same point of view. The relationship of a man to his sister is emphasized not so much by the fact that he may not have sexual intercourse with her, as that she alone of all women is withheld from him. In the same way the relationship of a man to his mother-in-law is emphasized by the fact that he may meet and speak to all women save her alone. The facts of leadership are often impressed upon commoners in the same way, *e.g.* in New Zealand or Samoa. However, I wish in this paper to discuss not so much the taboo as the special act of licence. Just as the taboo is enforced by tradition to be observed in relation to some specific activity, so the occasion of obscene behaviour is socially controlled and regulated by tradition. Just as the main characteristic of the taboo is that a man *may not do* what he is habitually accustomed to do, so the main characteristic of the obscenity is that a man *may do* what he is normally prohibited from doing. A common function of both the taboo and of the special acts of obscenity is to make a break in the ordinary routine of an individual's life and so give emphasis to the social value[1] of the activity with which the taboo and the obscenity are associated.

The similar function of the taboo, and of the special acts of obscenity are well illustrated in an instance given by Smith and Dale amongst the Ba-Ila. Nothing could be more disgusting to an Ila than intercourse between a man and his sister or daughter, yet we are told, "If a man wants very special luck, he not only gets the charm, but under the doctor's instructions he commits incest with his sister or daughter before starting on his undertaking." (i, p. 261.) We find this act of terrible profanity performed just where we would normally expect to find sex- and food-taboos coupled with the magic. Amongst the Ba-Thonga also we find that on the

[1] For concept of "social value," see A. R. Brown's *Andaman Islanders*, passim.

death of a man his widows ritually prostitute themselves. We would expect on such occasion rigid taboos on all sexual intercourse.

I think that the explanation suggested here will help us to understand many acts of prescribed and stereotyped obscenity. It does not explain all types of obscenity, nor does it attempt to explain the psychology of obscenity. It attempts to explain why socially controlled and stereotyped obscenity carried out collectively is associated with certain social activities.

IX.—Association of Obscenity with Ceremonial Activities.

I have said earlier in this paper that the taboo, and the same applies to stereotyped obscenity, must not be treated as a distinct entity defined by its sanction, but must be considered in relation to the activity in which its plays its rôle. Thus whilst a generalization has been made which may explain the association of stereotyped obscenity in general with activities of social value and importance, we still have to show its specific function within specific activities.

Thus we have noted that collective obscenities generally occur as part of large ceremonial undertakings, such as those associated with death, the birth of twins, drought and initiation into manhood. Now these are all occasions of emotional stress fraught with grave danger both to the individual who experiences them and to the society. The pent-up emotion of anger, fear, sorrow, grief reaches a point where some activity is essential; yet, unless this activity is guided into harmless channels it may prove to be fatal to the individual and disruptive to society. On such occasions society condones, or even prescribes, actions which it ordinarily prohibits and penalizes.

It is well known that these primary tendencies, such as sex, which are essential to the preservation of society as much as to the preservation of individual life, are nevertheless in their unregulated expression incompatible with even the most primitive form of culture known to us. To preserve and transmit culture, individual gratification has to be subordinated to social ends, and this brings to the individual many painful experiences, labour, obedience to authority, limitation of appetite to social convention, and respect for the manifold restrictions and regulations which mould and transform the common tendencies of his species (instincts). It seems indeed that all the manifold and complex systems of societies as developed as our own; such lofty systems as we have built—science, art, religion—all trace their energy to these primary tendencies, especially that of sex. By a process, to which the name of sublimation is given by one school of writers, those tendencies most inimical to culture are the very forces which have sustained and developed it.

Such a process, however, may defeat its own ends. By over-repressing primary tendencies, instead of the individual's energies being devoted to cultural ends, they are deflected to obsessions, delusions, and sometimes suicide, so that he is of no value to society at all. This view of culture is associated with Freud and his school, and

both they and others have pointed out how societies do, and how our own society should, give free play within bounds to the exercise of these primary tendencies, since such a course is far less dangerous to society than over-repression.

It has been deemed wise to draw attention to this broad and comprehensive theory of culture, in order that our explanation of obscenity on ceremonial occasions should not stand alone, but may be shown as just one of a large number of social customs with the same social function, viz., of providing a channel of activity for the harmless expenditure of emotional tension highly dangerous for the individual and disruptive to society.

It will be better to give illustrations of this function. Obscenities occur amongst many tribes at ceremonies of initiation into manhood and womanhood of boys and girls. The commonest features of such initiations (and also into secret societies) are the rigours to which the initiates have to submit. Severe floggings, teasing and tormenting, hunger, thirst, exacting labour, exhausting dances, bitter humiliation, rape, sodomy, these and many other trying experiences are imposed upon them. Not only does the manner of their life lead to emotional tension, but its severity, its pain, and its fatigue tend to make the person experiencing them seek an outlet in immediate, and probably sexual, gratification.[1]

The severity of initiation ceremonies is an essential part of their educational purpose, but this purpose would not be served were the severity to lead to sudden and disruptive passions. The creation of an alternative and permissible channel of activity compensates the initiate for his painful and fatiguing experiences, whilst at the same time maintaining the purpose of the discipline inflicted.

We could take each typical occasion upon which there is a collective expression of obscenity—death, birth of twins, drought, and so on—and we could show in each instance, as in initiation, how the occasion is one of great emotional tension to the individual, and how the expression of his emotional responses is not left to chance, but is socially determined and guided into traditional channels.

We do not, however, propose to consider each of these occasions separately, as the general deductive statements given above will, we think, provide a working psychological explanation for them all. Therefore to the broad generalization we first put forward we shall add an appendix (*a*) :—

> The general function of collective and prescribed obscenity is to give emphasis to the social value of the activity with which it is associated.
>
> (*a*) Many of the occasions of this type of obscenity are crises in human life fraught with peril to the individual and to society. The further function of obscenity, therefore, is to provide a socially regulated means of expressing this emotion.

[1] "When, for instance, the demands of reality are severe, when life is hard to bear, there is a tendency for the person's mental activities to revert to the primary types with all the serious consequences of this." (Jones, *Papers on Psycho-analysis*, p. 5.)

X.—Economic Function of Obscenity.

We have seen that obscenity, in particular obscene songs, is often correlated with a definite act of joint labour. Before trying to explain this special correlation I will draw attention to another specific correlation, that between the taboo and economic undertakings.

All labour is unpleasant and requires some drive behind it.[1] Such drives are found in incentive, in concomitant stimuli, in human company, and in other ways with which economists have made us familiar. Such drives are especially necessary in joint labour which is arduous or requires organization over a long period. The special function of the taboo in its association with economic undertakings is to act as a drive behind the labour. I have not given the taboos associated with the undertakings described in the first part of this essay, but I will give two instances now.

When the Ba-Thonga wish to construct a new village, a task already referred to in this paper, the members of the village first collect all the building material. Before commencing the construction of the huts the headman of the village leaves the old village, into which he may never again enter. He takes his chief wife with him, and in the evening they have sexual intercourse on the spot chosen for the new village. Next day the rest of the villagers come, and there begins a period, of about one month, called *buhlapfa* (time of moving). During this month the workers have to observe taboos; sexual relations are absolutely prohibited, and no one may wash his body during the whole *buhlapfa*. The reason given for the first taboo is that sexual intercourse would injure the headman of the village, and for the second that washing would cause rain to fall. Among the Ba-Thonga clans there are other *buhlapfa* taboos. No one is allowed to light a fire in the new village until it is completely built, all cooking being done outside the fence. Crushing mealies in the mortars is also prohibited: so also is dancing: also whistling, since it might attract wizards. (i. p. 320 ff.)

This example shows us clearly how the taboo acts as a drive behind the labour. The pleasures of sexual intercourse and washing and dancing, and the comfort of cooking within the village are prohibited, and the normal routine of family life is curtailed until the labour is accomplished.

I will give one more example. I have already mentioned the smelting operations amongst the Ba-Ila. When carrying out the long and difficult smelting

[1] The unpleasantness of labour and the need to overcome the reluctance with which it is taken up is too obvious and well known to require elaboration. It is interesting, however, to note the etymology of "work"-word symbols. The French *travail* is related to the Italian word *travaglio* which means "suffering"; the word "painful" was used in the Middle Ages in the sense of "industrious": the Italian word for work, *lavoro*, comes from the Latin *labor* (pain); the Greek word πενομαι means both "to work" and "to suffer," as does the Hebrew *assab*. (From Jones, *ibid.* p. 175.)

operations the workers live away from their village homes. Whilst residing in their temporary shelters, "If anyone wishes to visit the village, he must on no account have connection with his wife. He may not enter his house—in particular, he may not sit on his bed—but squats down at the door, where, if his wife cooks him food, he must eat it. And the women staying in the village may not wash, nor anoint themselves, nor put on any ornaments that might attract the notice of men. They are, as we were told, in the same state as recently bereaved widows." Also, while the men are moulding the kilns, they may not drink any water, but only *namenze*. (i. p. 207.)

Here again we see how the comforts and pleasures of home-life are denied to the workers until the labour is completed, and at the same time all aids to sexual attraction which might let loose the socially disruptive forces of sex are forbidden to the women.

The method I have applied in the examination of the taboo, namely, to study its function in relation to the activity with which it is associated, I will now apply to the obscenity already described.

We found that stereotyped obscenity, especially obscene songs, were correlated to specific acts of labour. Unfortunately, we do not know with sufficient exactitude how close the correlation is in most of the Ba-Ila, Ba-Thonga, and other data, to solve our problems with certainty. The obscene songs have rhythm and erotic meaning. I will discuss rhythm first.

I showed from my Zande material how the rhythm of these songs marks the time for the labour. In beating the millet and in grinding the malted grain the women workers all made the same movements to a fast rhythm. Presumably the Ba-Ila must have carried out their sowing, fishing, smelting, and canoe-launching operations to the rhythm of the erotic songs, since they sang them during the work, but we are not told so explicitly. In the same absence of statement it is necessary to infer that the Ba-Thonga could not very well have carried the roofs of their huts, nor pounded their mealies whilst singing songs, unless their movements were, to some extent at any rate, correlated to the rhythm of the songs.

The correlation of labour to rhythm is a matter of some importance to theoretical workers. It is well known that those who work to rhythm suffer far less exhaustion than those who do not work to rhythm.[1] The functional value of rhythm, is greatly increased when it accompanies joint labour, as it organizes the movements of each worker so that they take place in harmony with the whole scheme of the undertaking.

I shall not labour this point any more here, since it has constantly been worked out by other writers, and because I hope later to deal in full with the relation of rhythm to labour amongst the A-Zande.

[1] K. Bucher, *Arbeit und Rhythmus*. See also B. Malinowski, "Primitive Labour," *Nature*, Aug. 15th, 1925.

The songs described in the early part of this paper have not only rhythm, but are all characterized by their erotic meaning. The special privilege allowed to the workers in singing vulgar songs, considered as shocking and indecent at other times, must be regarded as one of the concomitant palliatives of labour which assist the workers to combat weariness and monotony. Those who have seen natives beating millet or grinding malted grain for hours together know how exhausting a labour it is. Those who have seen native men carrying the roof of a hut for any distance, or who have seen a woman or girl pounding grain, know how arduous is the one, how monotonous the other. Carrying canoes, sowing, fishing, smelting, can all be tiring occupations, and are carried out efficiently owing largely to the palliatives allowed to the workers.[1]

XI.—CONCLUSION.

We may now summarize our conclusions :—

(1) There are certain types of obscene behaviour the expression of which is always collective. These are usually taboo, but are permitted or prescribed on certain occasions.

[1] Professor Seligman has kindly drawn attention to the importance of the "dramatization" which we observe in these social expressions of obscenity. He has also drawn my notice to the probable psycho-analytical explanation of the data given in this paper. The explanation which I have given here to account for the association of obscenity with acts of labour is largely in accord with psycho-analytical theory which would consider that the function of such obscenity is to act as a drive and palliative of labour, regarding the obscenities as a result of the clash between necessary labour (reality-principle) and the desire to avoid exertion (pain-pleasure-principle). The psycho-analytical writers go on, however, to develop their thesis by saying that acts of labour and of copulation are referred to by the same word-symbol, not only because certain attributes of each are similar so that the two distinct activities become associated in the mind, but because also there is a motive, a specific function in this extension of the word-symbol from its primary referent (the idea of copulation) to its symbolic equivalent (an act of labour). Primitive man, according to these writers (*see* Jones, *ibid.*, p. 177, and also Sperber's article in *Imago*, 1912, "Uber den Einfluss sexueller Momente auf Entstehung und Entwicklung der Sprache"), gets over his inertia and repugnance for labour by sexualizing his tasks. He treats them as "an equivalent of, and substitute for, sexual functioning." I must confess to a doubt as to the precise meaning attached by writers of this school to much of their terminology. What do they mean when they say that tasks are an "equivalent of" or a "substitute for" sexual acts? It may be quite true that amongst primitive peoples much energy is devoted to labour which would otherwise be devoted to sexual gratification. It is also doubtless true that sexual interest is a stimulus to labour. If this is so, then the fatigue of hard and exhausting labour would tend to lead to an attempt to obtain relief through sexual gratification. But since this is impossible, because sexual desire is rigidly repressed to allow necessary labour, then an alternative mode of relief is offered by erotic symbolism and songs. This may be true, but as I do not understand the processes by which work is sexualized in the manner referred to, or precisely what is meant by such a statement, I prefer simply to give the theory. Certainly I do not think that there is any strong sexual interest consciously attached to the obscenity, and I believe that its importance lies not so much in that it is sexual, but in that it is normally prohibited by society and that the removal of this prohibition gives a palliative of privilege to the workers.

(2) These occasions are all of social importance, and fall roughly under two headings. Religious Ceremonies and Joint Economic Undertakings.

We explain the obscenity in the following manner :—

(1) The withdrawal by society of its normal prohibitions gives special emphasis to the social value of the activity.

(2) It also canalizes human emotion into prescribed channels of expression at periods of human crisis.

(3) It gives both stimulus and reward to the workers during periods of joint and difficult labour, and through the special form of its expression, *i.e.* melody, it organizes the undertaking.

MODERN HUNTERS: SOME ACCOUNT OF THE KÂMELĨLO-KÂPCHEPKENDI DORŌBO (OKIEK) OF KENYA COLONY.

[With Plates XXVI–XXVIII.]

By G. W. B. Huntingford.

[*With an account of the Physical Features by the* Hon. P. L. O'Brien, M.A.]

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Preliminary Note.

This paper is based on information collected in Eastern Nandi (pororōsiek of Kâmelĩlo and Kâpchepkendi), where this section of the Dorōbo live. When visiting this district, I was accompanied by the Hon. P. L. O'Brien, M.A., to whom I am indebted for the account of the Physical Features, which is given on p. 376. My information was obtained through the medium of Nandi—which the Dorōbo speak even among themselves—and without an interpreter, chiefly from Dorōbo elders of the Kâplelach age. The Dorōbo were told that I wanted to see them by Parñgetuny arap Ñgam-ñgam, a former chief, whose acquaintance I made through his son Choimīm, one of

my apprentices in the Nandi Industrial School at Kâpsabet; our friendly reception by this elusive people is therefore due to Arap Ñgamñgam. We should like to make it clear that this paper is the result of a short *safari*, and intended as a preliminary study, not as a finished and complete account.

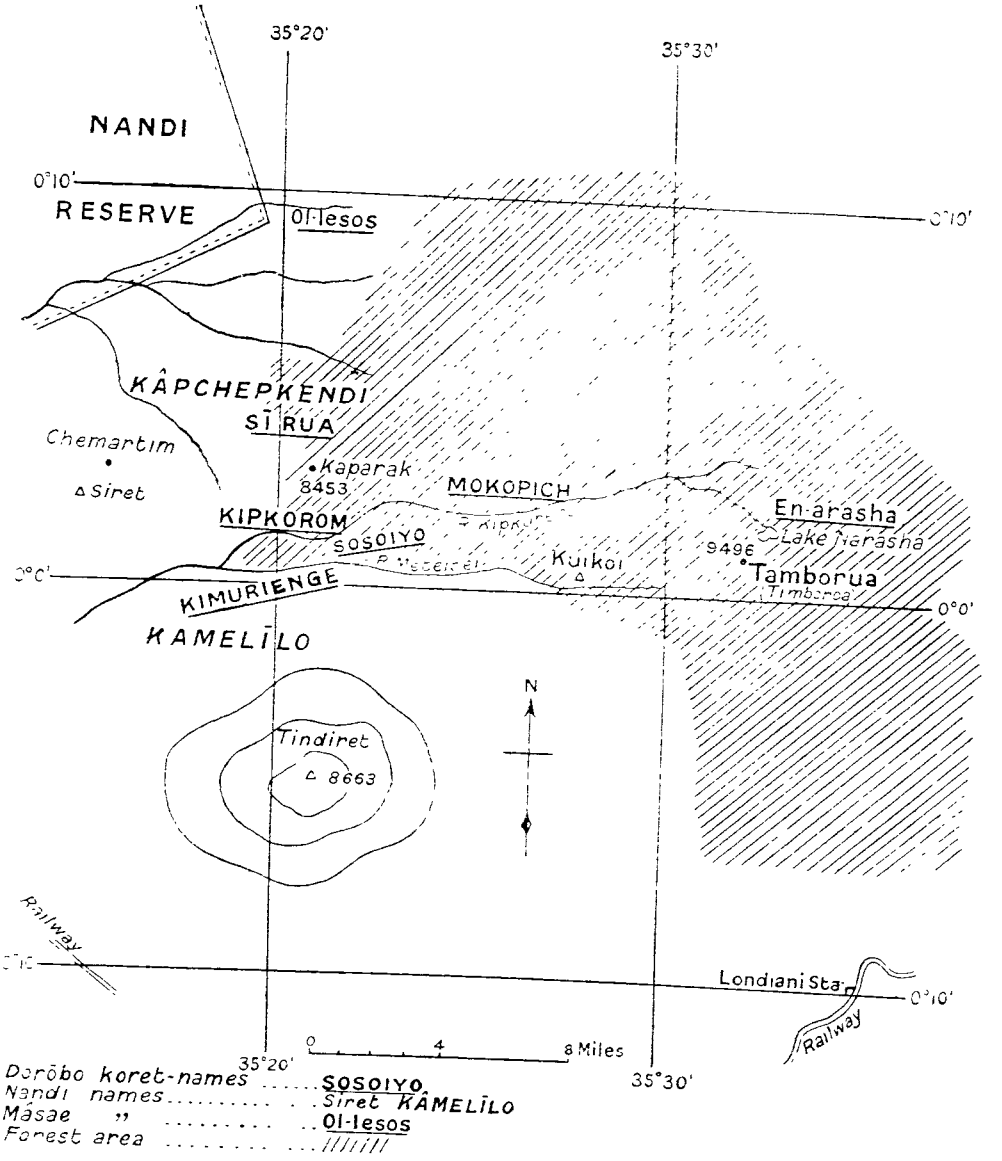


FIG. 1.—SKETCH-MAP OF THE KÂMELĪLO-KÂPCHEPKENDI DORŌBO COUNTRY.

Both Nandi and Dorōbo words are spelt according to the system adopted by Sir A. C. Hollis in his masterly work, *The Nandi*. It should be noted, in the words Okiot, Okiek (stem Oki-), that the k of the stem is semi-voiced, *i.e.* between k and g.

Nouns in Dorôbo and Nandi have two forms for the singular and two for the plural, *i.e.* a primary form, as *muren*, [a] warrior, and *muren-et*, [the] warrior: the characteristic letters of the secondary suffix are, sing., -t (-d); pl., -k. Words of both languages are usually given in the secondary form; primary forms are distinguished by an asterisk, thus: *mpituko**. When the Dorôbo use a Nandi word, or when the true Dorôbo is the same as Nandi, the words are marked by the letter N following. Masae words are marked thus: † (*engerait*†).

References.—H.M. = Sir A. C. Hollis. *The Masai*: H.N. = Sir A. C. Hollis, *The Nandi*.

I.—General Remarks on the Dorôbo Tribes: Their Origin and History.

The people who form the subject of this paper occupy the forest area north of Tindiret hill, above Muhoroni station on the Kenya and Uganda Railway, between lat. 0° 5′ S. and 0° 10′ N., and long. 35° 20′ E. and 35° 35′ E., the country that the Nandi call Kâpchepkendi and Kâmelîlo (*see* Text-fig. 1). The Dorôbo call themselves Okiot, pl. Okiek (fem. Chep-okiot, pl. Chep-okiek), by which name they are known to the Nandi. By the Masae they are called Ol-Torôbôni, pl. Il-Torôbo (fem. En-Dorôbôni, pl. In-Dorôbo). From the latter form is derived the name by which they are generally known, Wandorôbo. The meaning of the name Oki-ek (stem Oki-) is unknown; the Masae name Torôbo may possibly be derived from the adjective *dorop* (pl. *doropu*) (short), in allusion to the short stature of the Dorôbo (*see below*, "Physical Features"), though Hollis (*The Masai*, p. 28, n. 2) thinks that it is not Since the word Okiek is not perhaps as well known as Dorôbo, I have used the latter throughout this paper.

People calling themselves Okiek are found in various parts of Kenya Colony, in forest regions. A list of the sections[1] of the Dorôbo is given by Mr. C. W. Hobley in *Man*, 1905, 21, together with a short vocabulary of three Dorôbo dialects. In a note to the same paper, Mr. Hobley adds a list of 48 words of the language of a section called "El Mogogodo," who live near the E-Uuaso Ñgiro, and who are thought to be Dorôbo. Whatever the origin of the vocabulary of the other Dorôbo languages may be, their structure is certainly Nandi; the "El Mogogodo" vocabulary, on the other hand, is apparently a mixture from various sources, among which I can trace Masae, Nandi, Turkana and Nilotic (Dho-Luo) words. The presumption is, therefore, that the "El Mogogodo" are not true Dorôbo. The earliest account of the Dorôbo seems to be that of the Rev. J. L. Krapf, who wrote in the introduction to his *Vocabulary of the Engutuk Eloikob* (1854) that "the Wandurôbo are poor people, eating anything they may obtain: they eat the meat of the elephant, and of all other game. They cover their huts with dry grass, not with skins, as the

[1] Not "clans," as Mr. Hobley calls them.

Wakuafi [Mâsae] do, who therefore boast of their own superior houses. These poor people speak the language of the Wakuafi, but it appears they have also a language of their own, the knowledge of which would undoubtedly enrich the treasury of African philology." Krapf is, of course, writing of Dorōbo in contact with the southern Mâsae. The latest contribution to the study of the Dorōbo, that of Maguire in the *Journal of the African Society*, vol. xxviii (1928), is disappointing, and marred by an ignorance of Nandi, a knowledge of which is essential in treating of the Dorōbo.

The actual distribution and sections of the Dorōbo in Kenya and Tanganyika are as follows:—

Kenya Dorōbo.

1. Kâmelīlo-Kâpchepkendi. 2. Lo-'l-diani. 3. Ravine. 4. East of Kipsikīs.	In contact with the Nandi-speaking tribes of Nandi, Kamasya, and Kipsikīs.
5. Chepcharwanek, Kamiek, and Kipkurerek, on the Mau escarpment. 6. Salēta. 7. Kidoñg.	In contact with the Mâsae.
8. Digiri. 9. Sisiwek and Lalariok, N. of Mt. Kenya (E. Uaso Ñgiro).	In contact with Kikuyu-speaking tribes.

Tanganyika Dorōbo.

10. Taturu.[1] lat. 5° S.
11. Mosiro.[2]
12. Aramanik.[2]

All these sections speak dialects of Nandi, irrespective of the linguistic groups with which they may be in contact. The possession of a Nandi dialect seems to be one of the criteria by which true Dorōbo can be distinguished. (Sketch-map, Text-fig. 2.)

The origin of the Dorōbo is uncertain. Those of the Kâmelīlo-Kâpchepkendi group do not differ noticeably from the Nandi in physical character, except in one or two details, which are probably due to environment: from this we cannot, therefore, derive much help. Mâsae and Nandi traditions point to the Dorōbo having been found by them where they are now, when they first came into this part of eastern

[1] J. T. Last, *Polyglotta Africana Orientalis*, p. 188; G. W. B. H. in *Man*, 1928, 139.
[2] R. A. J. Maguire, "Il Torōbo," in *Journ. African Soc.*, xxviii, pp. 127, 249.

Africa ; in the Mâsae story called " Naiterukop " (Beginner of earth) there were originally three things on earth—an elephant, a snake and a Dorōbo (H.M., p. 266) : and in the Nandi story " Tapand' ap emet " (The beginning of the earth) God found three things on earth—an elephant, the thunder, and a Dorōbo (H.N., p. 111). The Dorōbo tradition that " we have always lived here " seems to confirm these

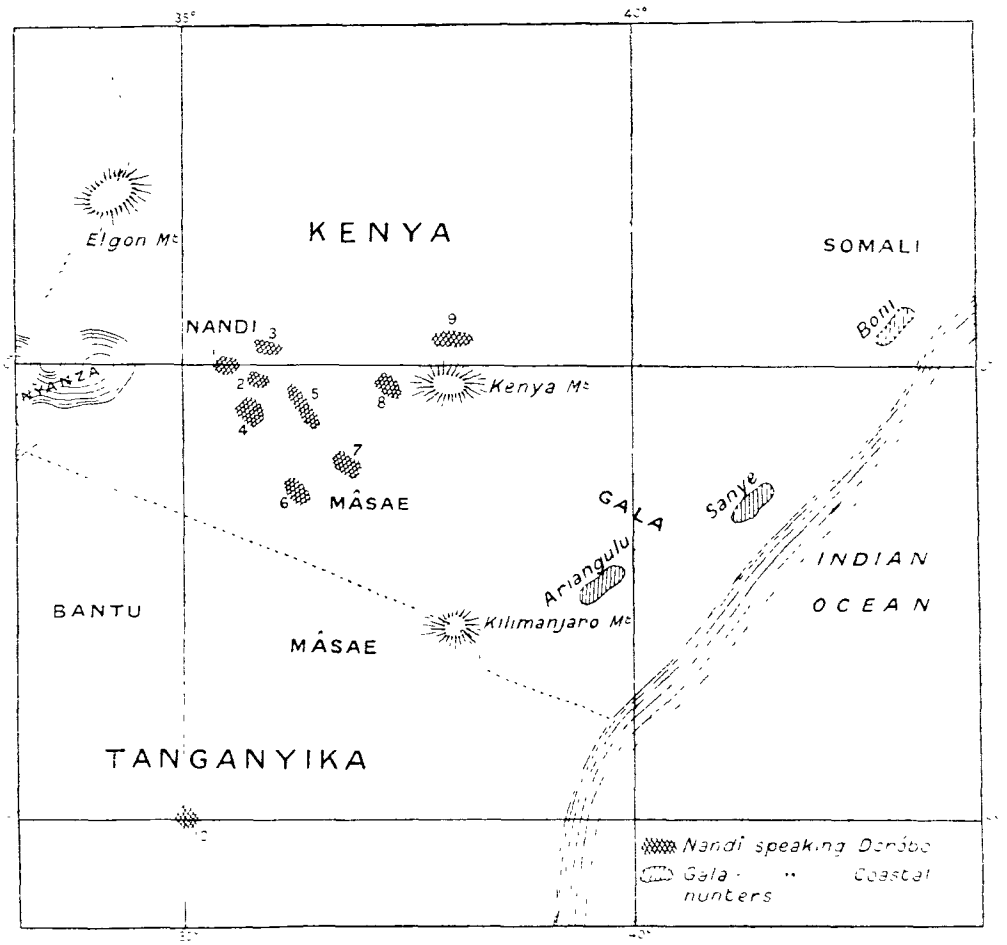


FIG. 2.—SKETCH-MAP OF EASTERN AFRICA, SHOWING DISTRIBUTION OF NANDI-SPEAKING DORŌBO.

stories. Further, Hollis quotes (H.N., p. 98) a tradition of the Moi clan, that a Dorōbo gave birth to a boy and a girl, who issued from a swelling in his leg, and who became the ancestors of " all the people upon earth." We may note that among the Kâmelīlo-Kâpchepkendi Dorōbo the chief clan is the Moi or Koñgonyot. Such evidence as we have for the Nandi tribes points to a movement from the north : and since the Dorōbo resemble the Nandi in features, customs, and language, we can only

set forth certain theories as to their origin, which are offered as a starting-point from which to work. The theories are :—

(1) That the Dorōbo are an autochthonous people who were found in East Africa by the Nandi and Màsae, and who have assimilated not only the Nandi language, but also some of their customs and religious ideas.

(2) That the Dorōbo are part of the parent-stock of the Màsae-Nandi group.

(3) That the Dorōbo are part of the Nandi sub-group, who broke off from the main body very much earlier than the other tribes, and had been separated so long from them that their original relationship had been forgotten by the time they came in contact again.

To all of these theories there are objections, not the least of which are linguistic. The conclusions arrived at with regard to the origin of a language do not necessarily hold good for the origin of the people who speak it ; but in this case the language is almost the only distinguishable feature, and must therefore be taken into consideration. The true Dorōbo language, as now spoken, is closer to Nandi than Suk, and much closer than Màsae. It appears that Suk broke off from the main group before the formation of the secondary suffix or " definite article " ; Dorōbo and the rest of the Nandi sub-group possess this suffix, which I believe is peculiar to this sub-group. Assuming, then, that the Nandi language passed through a stage with no secondary suffix, of which Suk[1] is the only remaining example—and it must have done so, nouns with primary and secondary suffixes being used side by side, and the secondary suffix being obviously a later development of the primary form—how can we account for either (i) the presence of the secondary suffix in Dorōbo if it was one of the parents of Nandi, since it could hardly be expected that the parent language would be as fully developed as its daughter ; or (ii) the absence from Suk of the secondary suffix, and its presence in Dorōbo, if both Dorōbo and Suk were early offshoots from the Nandi Sub-group ? Consideration of the facts suggests that the secondary suffix was first used in the Elgon languages (Kony, Sapei, etc.). Language and tradition seem to indicate that perhaps the first theory is the most tenable ; yet against it may be urged, why should the Dorōbo have assimilated the language and customs of the Nandi rather than those of the Màsae ? Should the first theory prove to be correct, we may suppose that the non-Nandi element in the Dorōbo vocabulary represents the language spoken before they came into contact with the Nandi.

In the coastal area of Kenya Colony there live other hunting tribes, known as Sanye,[2] Bōni,[3] and Ariangulu.[4] These tribes are of a very primitive description.

[1] *i.e.* The Suk subdivision of the Nandi group, comprising the dialects of Suk, Endo, and Marakwet.

[2] A. Werner in *Journ. E. Africa and Uganda Nat. Hist. Soc.*, 1913, p. 39, *n.* ; *Man*, 1913, 107.

[3] R. E. Salkeld in *Man*, 1905, 94.

[4] C. W. Hobley in *Man*, 1912, 9 ; A. M. Champion in *Journ. E. Africa and Uganda Nat. Hist. Soc.*, 1922, p. 21.

The Sanye and Ariangulu have been in subjection to the Gala, and speak dialects of Gala; the Bôni hunt for the Somali. They call themselves Watta or Watwa (the Gala call the Sanye, Wanya, pl. Watwa), which is also the name of a hunting people in Abyssinia who speak Gala but have also a language of their own.[1] They count themselves as the original inhabitants of Abyssinia. The Abyssinian Watta, the Sanye, Bôni, Ariangulu, Midgan of Somali, together with the Dume N.W. of Lake Stephanie, and the Wapare of Kilimanjaro, are claimed by R. Biasutti[2] to be connected with the Dorôbo. And it is not impossible to identify the people called UAUAT in the "Inscription of Una" (VIth dynasty, King Pepi I) with these modern Watta, of which the stem is possibly WA–, and the T a plural suffix. If we may accept this identification, the traditional antiquity of the hunting tribes is confirmed.

The old men give the following account of their past history :—

Ka-ki-menye	uli-tok	korosue-chu	olekinye-tukul,	kimi
We-dwelt	here	countries-these	of-old-always,	there-were

Meek	komas-i	kewanni	ak	Ipkwapek	komas-in
the-Nandi	side-this	open-country-this	and	the-Uasin-Gîshu-Mâsae	side-that

oñgatet.	Olekinye	kimi	Kâpcheptuen	ulin-po	korosue-chu	tukul
the-plain.	Of-old	there-were	the-Sirikwa	there-of (-at)	countries-these	all

ulin-bori	po	Soiin[3]	ko-pet-yo	keny.	Ma-ki-sue	kiit'-ake.
there-down	of	Soiin	they-are-lost	long-ago.	Not-we-know	thing-other.

["We have always lived in this country; the Nandi were on one side, in the open country, the Uasin-Gîshu Mâsae on the other side in the plain. Of old, the 'Sirikwa' lived in the plain of Soiin below. We do not know anything else."]

At the present day the Kâmelîlo-Kâpchepkendi Dorôbo do not seem to be very numerous or very flourishing. A number have left the depths of the forest and live on the edge (*saangutiet ap samak*). They assign as their reason for leaving the forest, the hardships consequent upon an epidemic of disease (*koroita*, N.), which was probably small-pox: the elders of the Kâplelach age say this happened when they were warriors, *i.e.* somewhere about 1895, when the Mâsae suffered heavily from this disease. When we visited Dorôbo huts in the forest, we were told that there were very few huts in that part of the forest. I suspect the Dorôbo like to make it seem that few live in the forest.

[1] E. Cerulli, "The Folk-literature of the Gala of Southern Abyssinia" (*Harvard African Studies, III*) p. 200; Massaja, "I mei trenta cinque anni di missione nell' alta Etiopia."

[2] *Boll. Soc. Geogr. Ital.*, Roma, s. 4, vol. vi, p. 175.

[3] Soiin was one of the Nandi emotinuek, or "counties," which was cut off after the Nandi Punitive Expedition of 1905. It included the Dorôbo country, and also the plain at the foot of the Nandi escarpment from Muhoroni to Kibos, which latter area the Nandi still refer to as Soiin.

II.—MODE OF SUBSISTENCE.

Houses.

The Dorōbo live in little shelters or huts (*kochonget*, pl. *kochongesiek*: N. *keriet*) built in small clearings in the forest: they are made of a framework of sticks stuck in the ground, and bent over, forming a domed roof: the whole is covered on the outside with leaves of trees and banana leaves, which are insufficient, in spite of the addition of an ox-hide on the top, to keep the hut dry inside when it rains. The upright sticks are strengthened by others tied across them with tree-rope. The huts are oblong, with rounded ends, and are of the following average dimensions:—Height, 5 ft. 10 ins.; width, 7 ft. 6 ins.; length, 11 ft. They are occupied for two or three months, after which they become ruinous and "full of fleas," when the family moves to a fresh site. Two to four people live in one hut. One group of huts we saw contained two huts, and had contained a third which had been pulled down. The huts are divided into two parts, the sleeping-place (*itōkto*, N.) and the fire-place, which are separated by two or three poles laid across the floor of the hut, on one side of which are laid ox-hides (*muēnik*; N. *muiuek*), upon which the occupants eat and sleep; at night they cover themselves with skins. In the other half of the hut is the door (*kurket*, N.), about 2 ft. high. Some huts have two doors, opposite each other. Between the door and the sleeping-place is the hearth (*māt*, N.), consisting of two or three smallish stones set on the floor. A loft (*sainet*, N.) is sometimes made in this part of the hut, extending across the width, and ending at the beginning of the sleeping-place. The loft is about 2 ft. 6 ins. above the floor, and is made of thin sticks supported on thicker cross-sticks, and tied together with tree-rope. Upon it are kept firewood and eleusine grain (Text-figs. 26–28). The only household utensils are a small broom (*wâtutiet*) about 14 ins. long, made of a bush-buck's tail fastened to a thin wooden handle, for sweeping the floor; "water jars" (*souyet*) made of a hollowed piece of bamboo about $2\frac{1}{2}$ ins. wide and 2 ft. 8 ins. long; a grindstone (*litēto*, N.) made of granite, for sharpening knives, and for grinding eleusine grain. Gourds and earthenware pots are obtained from the Nandi; the Dorōbo have no stools. Fire is produced by means of fire-sticks (*piinet*; N. *piōnet*) (Text-figs. 11*a*, 11*b*). A thin stick of the choruet tree (N.),[1] about 15 ins. long and $\frac{1}{3}$ in. thick, is stood upright on a stick of cedar (*teet*)[2] about 26 ins. long and 1 in. wide. The thin stick is called piinet, the cedar stick tasamet. The piinet is held between the palms of the hands, and the hands are rapidly rubbed together, beginning at the top of the piinet and working downwards (Pl. XXVI, Fig. 2). This is repeated until fire is obtained; the piinet drills a hole in the tasamet, and the heated wood-dust thus produced falls on to a knife-blade which is placed underneath. When sufficient heat is obtained it is laid on a small bundle of tinder (*sasyat* (dry grass) or fibre of the porōwet[3] tree), and blown till the tinder kindles.

[1] *Ficus* sp. [2] *Juniperus procera*. [3] *Dombeya* sp.

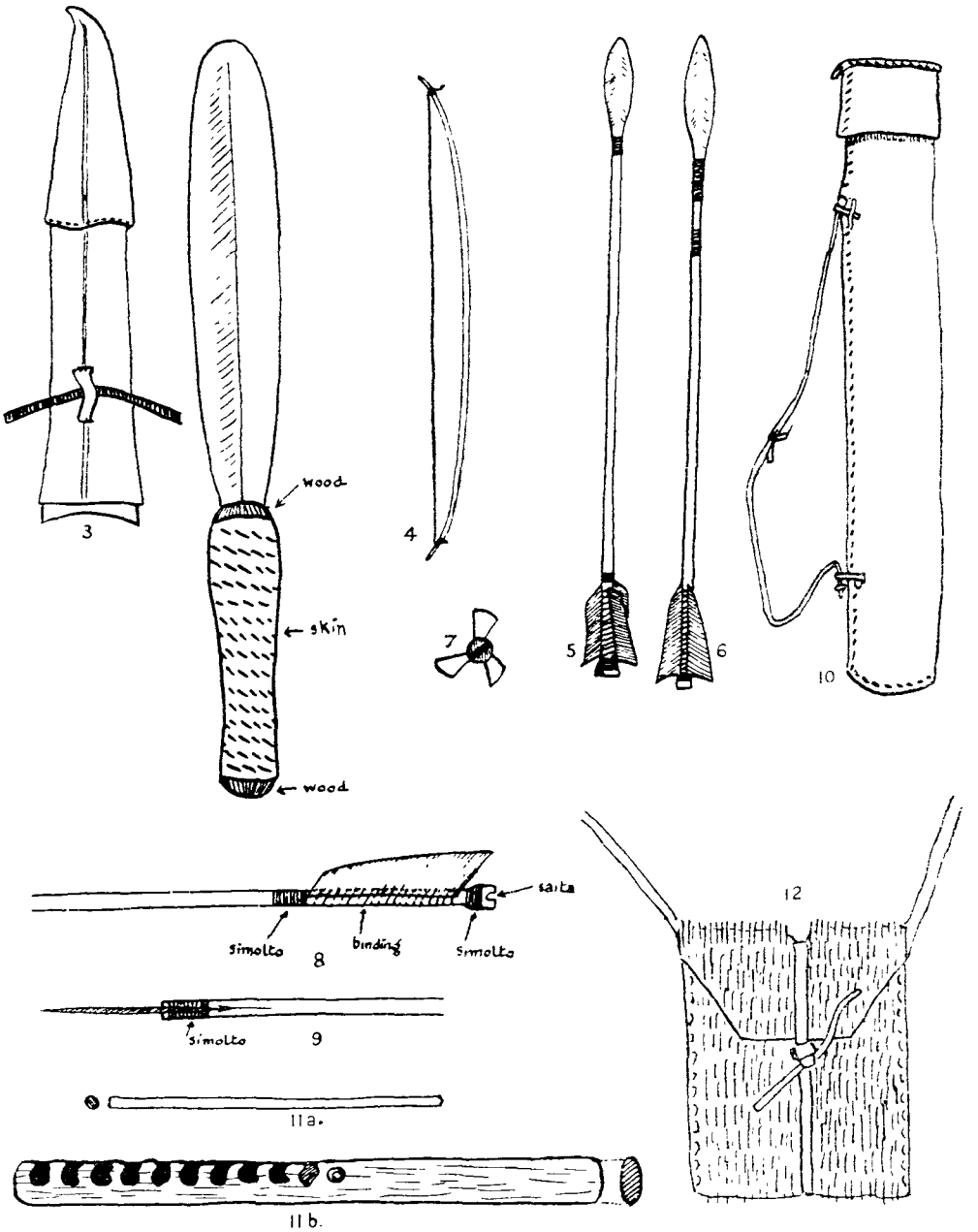


FIG. 3.—IRON KNIFE (*Chambolwet*) AND LEATHER SHEATH. FIG. 4.—BOW (*kuyañgda*). FIGS. 5, 6.—ARROWS (*kôtiek*). (5, N. *chepiloñgot* type. 6, N. *kipchapet* type.) FIG. 7.—BUTT END OF ARROW, SEEN IN CROSS-SECTION. FIG. 8.—DIAGRAM SHOWING ATTACHMENT OF FEATHERS TO ARROW. FIG. 9.—METHOD OF ATTACHING ARROWHEAD TO SHAFT. FIG. 10.—SKIN QUIVER (*mootiet*). FIG. 11.—FIRESTICKS: (a) *piiwet*, (b) *tasamet*. FIG. 12.—SKIN BAG (*motokel*). LENGTH, 8 INS.

Hunting.

The chief occupation and, in fact, till the last few years, the only occupation of the Dorōbo, is hunting (*sagas*: Kony, *kip-sagas-ian* = hunter). They say that at the present day they do not hunt as much as they used to. All kinds of animals were the objects of the chase: the buffalo (*kipturorōt*: N. *soiet*), rhinoceros (*kip-kamit*), leopard (*melilto*, N.), lion (*sombit*; *ñgetuindo* N..) giant pig (*tumda*, N.) were among the bigger game hunted. Various kinds of monkeys and antelopes are also sought after, both for their skins and their meat. (*See* "Food" for a list of the animals eaten by the Dorōbo.)

The weapons used in the chase are the bow (*kuyañgda*, N.) and arrow (*kōtiek*, N; *mbunatit*, etc.), and spears (*olmorondoit*†). Arrows and spears for hunting are poisoned with a concoction made from the keliot tree (N.).[1] Formerly, before the elephant disappeared from the Tindiret region it was hunted and killed with poisoned spears. Small game, besides being shot, are also caught in traps and snares, of which the Dorōbo have two kinds; buffalo are also caught in the first kind: (1) Pits (*nguret*), covered with thin sticks and leaves, with spikes (*kipwaiyeinat*) set in the bottom. (2) Snares (*porōwet*; N. *mestet*) (Text-fig. 25), which are constructed as follows: a springy stick, A, is stuck in the ground and bent over; to its upper end is fastened a piece of tree-rope, B, which is loosely attached to a hooped stick stuck in the ground, supported by three short upright sticks; a little lower down the bent stick A is fastened a noose made from the ndorokyat tree, which is held in place by a cleft stick stuck in the ground on each side; under the noose is made a little platform of sticks, which is covered with leaves. When this platform is touched, since it is in contact with the stick holding the rope B, it releases the rope, and the stick A flies up, thereby tightening the noose.

Dogs (*ñgôkto*, pl. *ñgôkik*) are used in hunting, and are the only animals kept by the Dorōbo who live in the forest. When in the forest they wear leather collars, to which are attached, under the throat, a small bell. The dogs seem to be of a different breed to the ordinary thin-nosed cur so common in native reserves, and they are kept in better condition. Their excrement round the huts takes the place of cow-dung in the neighbourhood of a Nandi hut, and makes the air unpleasant.

A description of the weapons is given on p. 346 below.

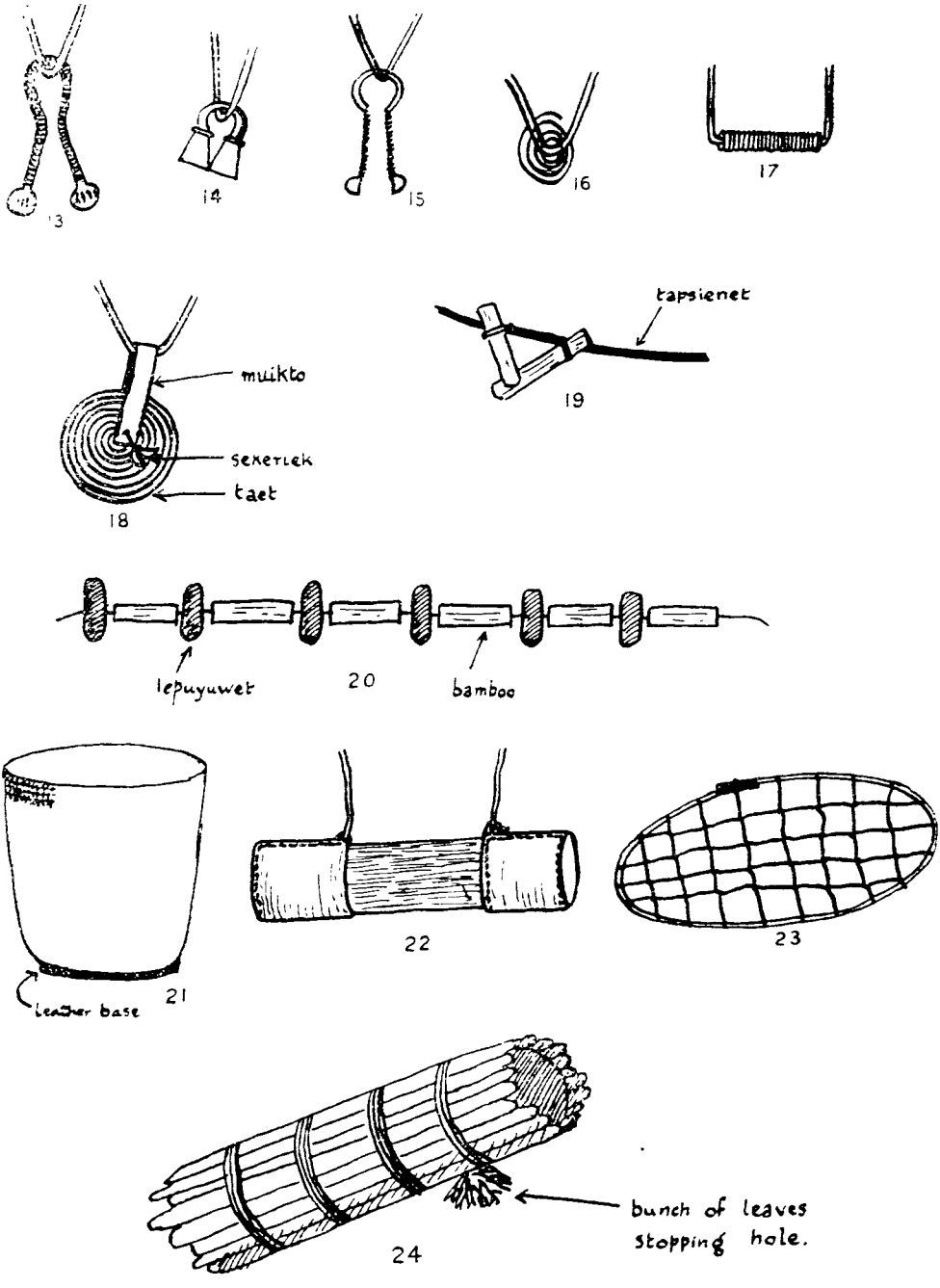
Food.

The staple foods of the Dorōbo are honey (*kumiat*, N.) and meat (*panyek*, N.). For meat they kill the following animals:—

Antelopes.

Kipkeseket (N. *kimerenget*,).—Blue duiker (*Cephalophus æquatorialis*).
Mindet (N.).—Red duiker (*C. igna-issaci*).

[1] *Acocanthera Schimperi*.



FIGS. 13–17.—MEN'S IRON EAR-RINGS: (13–16. *olaimeriat*. 17, *kimeitaiit*). FIG. 18.—MARRIED WOMAN'S BRASS EAR-RING (*taet*). FIG. 19.—CHARM OF EUPHORBIA WOOD AGAINST RHEUMATISM. FIG. 20.—*Lepuyuwet* NECKLACE, WORN FOR PROTECTION AGAINST THE EVIL EYE. FIG. 21.—BASKET (*kerepet*). FIG. 22.—BAMBOO TOBACCO-BOX WITH SKIN COVERINGS (*kiprauuit*). FIG. 23.—CARRYING NET (*lekwelet*). FIG. 24.—HONEY-BARREL (*pasanet*).

Keremaiit (N. *poinet*).—Bush-buck (*Tragelaphus scriptus*).
Irukutet (N. *irukutiet*).—Reed-buck.
Kenyelet (N.).—Oribi.
Kipsomeret (N.).—Water-buck (*Cobus ellipsiprymnus*).

Monkeys.

Sairet (N. *koroiityet*.).—Colobus (*Colobus guereza*).
Tisiet (N.).—(*Cercopithecus albigularis*).
Chereret (N.).—(*Cercopithecus griseo-viridis*).
Konokchot (N. *moset*).—Baboon.

Other Game.

Toraet (N.).—Wild pig (*Phacochœrus æthiopicus*).
Tumda (N.).—Giant pig.
Melilto (N.).—Leopard.
Sombit (N. *ñgetundo*).—Lion.
Soiet (N.).—Buffalo.
Pēliot (N.).—Elephant.

Of other kinds of food, they eat bananas (*sāsuriet* (N.), fruit (*e.g.* berries, such as those of the momonyat (N.) plant, *Rubus rigidus*), nettles (*siwot* (N.), *Girardinia condensata*), and other wild products.

They make honey-barrels (*pasanet*, pl. *pasanik*; N. *moinget*) (Text-fig. 24), in which the bees swarm. The barrels are made either of rough slats of the tenetwet (N. *tenduet*.) tree, or of wide strips of thick bark. The ends of the barrels are made of circular blocks of wood, which keep the slats in place, the slats being bound outside with tree-rope. A hole large enough to admit the hand is left in the middle of the barrel and stuffed with a bunch of leaves. The barrel is placed on forked branches, the hole being in the under side. If the tree is a tall one, a pole is bound to it with tree-rope, by which the owner climbs to the barrel.

To take honey, the Dorōbo first makes fire in a loose ball of sasyat (fibre); he puts this under his garment, and taking some leaves of the kipsepuet (N.) tree[1] in which to wrap the honey, climbs up to the barrel. The sasyat is blown till it makes a good smoke, and the bunch of leaves having been removed from the barrel, the smoking sasyat is held to the hole in the barrel. Having waited a little, the Dorōbo inserts his hand and removes the honey-comb (*kipiririty*et) from the barrel, which he wraps in the kipsepuet leaves. Closing the hole, he descends, not worrying about any bee-stings he may receive.

In times of plenty, food is eaten in the morning, at midday, and in the evening. If there is no food, the people go hungry and wait till some is produced. The women

[1] *Tilia* sp.

prepare food and wait upon the men, themselves eating when the men have finished. At the present day the Dorôbo are taking to eating eleusine grain, which is crushed on grindstones (*lutēto*, N.) and made into a sort of porridge : and milk, which they obtain from Nandi, if there are any near them. Beer is made from honey, and is called *kipketīnik* (N.). Tobacco (*tumatet*, N. : or *chepkochūtit*,[1] N.) is bought from the Nandi, and is taken by men, and occasionally by women. It is either chewed (*mit*, N.) or smoked in Kavirondo pipes (*terēnik-ap-tumatet*, or *kwesīnik*, N.), which are also obtained from the Nandi. The men carry tobacco in cylindrical boxes called *kiprauwit* (N. *kipraut*) (Text-fig. 22), made from sosoiyat (bamboo), with skin coverings for the ends, to which are attached thin leather thongs, by which the box is slung round the neck.[2]

Agriculture and Stock.

Formerly the Dorôbo possessed no stock, nor did they till the ground. During the last quarter of a century or so a few of those living on the edge of the forest have taken to cultivating small plantations (*imbaret*, N.), in which they grow eleusine grain (*olbaiek*†, or *paiek* : N. *pāk*) only. A few possess, at the present day, one or two cows ; others have a few goats and sheep ; no one has more than 5 to 10 head. The only animals they possess in numbers are dogs.

Dress and Ornaments.

(i) *Males.*—Boys wear skins of antelopes and monkeys (*akuriet* : N. *inguriet*). Warriors wear skin garments of duiker (*ngemwuyo*,* N.) called akuriet ; they wear leg-bells attached to a leather band (*mpitiko*,* pl. *mpitikoïsiek*) on the ankles. Nowadays some wear pieces of cotton-cloth (*anget*, N.) dyed brown.[3] Old men wear bush-buck skins (*akuriet*) with the fur left on. Caps (*engeraitt*) are worn, of blue duiker skin with the fur left on, by old men, and of cotton-cloth by warriors. Belts (*entoreat*†) of leather are worn by old men, and of beads by boys and warriors. Necklaces of chains (*sirimdo*, N.) or iron-wire (*asingait*, N.) are worn : also various kinds of iron ear-rings (*olaimeriat*† and *kimeitait* (Text-figs. 13-17) : N. *kimeiteitiot*) are worn by warriors and elders.

(ii) *Females.*—The dress of the women and girls is very similar to that of Nandi women. They wear skirts (*chepkaugat* : N. *chepkaweit*) and upper garments (*koliket*, N.), both of tanned leather, with the fur removed, in the same manner as the Nandi women. Their ornaments consist of iron-wire armlets and leglets (*makirarēnik* and *karik*, N.), and wire necklaces (*asingait*, pl. *asingaïsiek*, N.). Married women wear

[1] *Chepkochutit* means "snuff" in Nandi.

[2] These are similar to the Nandi tobacco-boxes, from which indeed they are probably borrowed.

[3] As do the Nandi, from whom doubtless the custom spread to the Dorôbo.

large discs of brass wire (*taet*, pl. *taōk*), which are hung from the ears by leather straps (*muikto*; N. *muito*), to which are frequently fastened one or two cowries (*sokeriek*: N. *sekerek*) (Text-fig. 18). These ear-rings are, as among the Nandi, the sign of marriage. Girls wear skins (*akuriet*) or cloth (*anget*). They have armlets (*karik*, N.) and leglets (*ndapakuet*: N. *tapakuet*) of iron-wire, and necklaces of wire or beads (*asingait*). The edges of skin garments, both of men and women, are generally trimmed and stitched.

Mutilations of the Body.

(a) *Ears.*—In both sexes a small hole (*engeberit*; Kony *ngeberit*) is bored in the top of the ear. This among the Nandi is the tribal mark, and it seems to be so among the Dorōbo. Both sexes also pierce the lobes of the ears, and elongate them by inserting cylindrical blocks of wood (*ketik ap iitik*, N.), as among the Nandi. Ear-rings are hung from the lobes, which in the case of men are often broken by being caught by branches in the forest.

(b) *Teeth.*—Some Dorōbo remove the two middle incisors of the lower jaw, like the Nandi and other tribes; others do not. This is done, they say, "*si ko-kororon-it piik*" (in order that people may become beautiful).

(c) *Sexual Organs.*—Circumcision and clitoridectomy are practised. (*See* V, "Circumcision.")

Hair.

Men wear their hair moderately long; they put oil and red clay (*ngaret*, N.) on the hair, which sometimes becomes matted, as seen often on Nandi, particularly women. The head is shaved periodically. Boys put red clay and oil on to the shaved head. Both old men and senior warriors wear beards and moustaches, though to no greater extent than the Nandi. In some old men the beard is seen trimmed and pointed. Girls and women shave their heads periodically, and put oil on the shaved heads.

Paint.

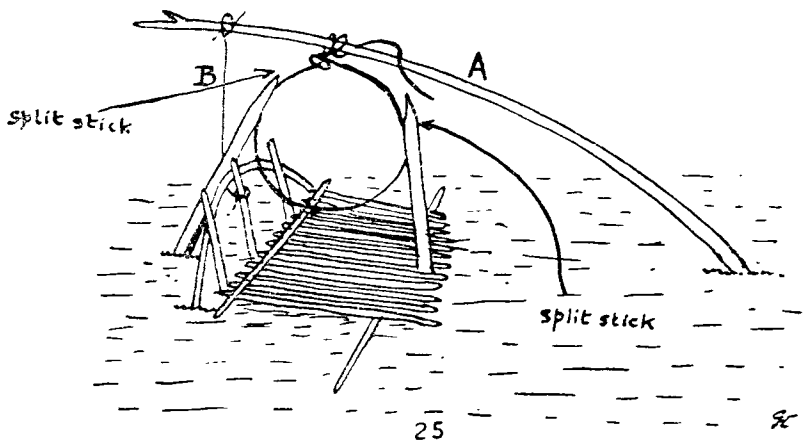
Warriors paint their legs with red and white clay, as do the Nandi; they also put red clay on their heads.

Arts and Crafts.

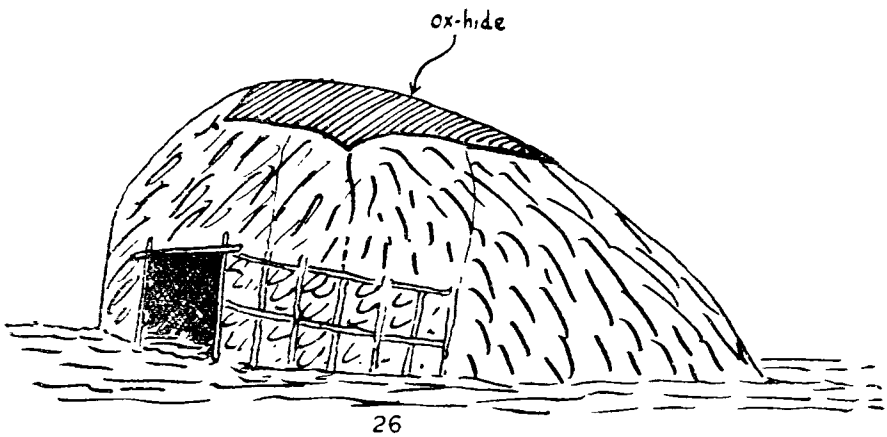
The Dorōbo have few crafts of their own. They have no knowledge of metallurgy, and there are no smiths; all their ironwork is obtained from the Nandi.

(*a*) Weapons of Chase and War.

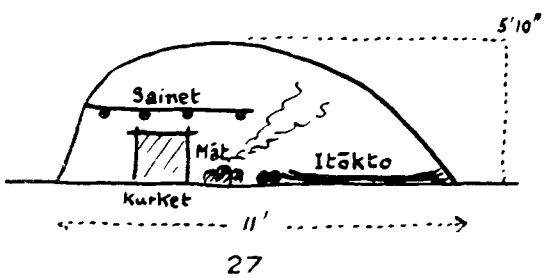
These consist of bows (*kuyañgda*), arrows (*kôtiek*, *kiperēnik*, *kipchâponik*, N.; and *mbunatit*); spears (*olmorondoit*† or *morondoit*†); swords (*wesekto*; or *rotuet*, N.); shields (*loñget*, N.); and knives (*chamboluet*, N.). Spears, swords, and shields are obtained from the Nandi.



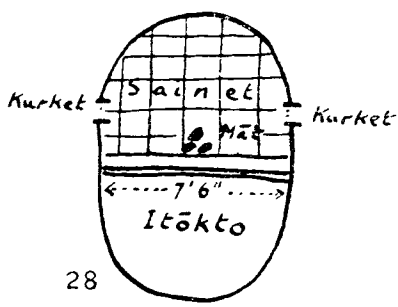
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28

FIG. 25.—GAME SNARE (*porōwet*). FIG. 26.—HUT (*kochonget*). FIG. 27.—SECTION OF HUT.
FIG. 28.—PLAN OF HUT.

Bows.—These are made from the kuriot (N.) tree, and average 5 ft. 1 in. in length. The string (*īnet*, N.), which is made from the entrails of the giant pig (*tumda*, N.), is tied to the bow (Text-fig. 4).

Arrows.—The iron heads (*kipchâpet*) are bought from the Nandi, and are usually of the Nandi shapes called chepiloñgiot (Text-fig. 5) and kipchapet (Text-fig. 6) (H.N. Figs. 33, 34). They are from 2½ ins. to 4 ins. long. They are always tanged, and are inserted in a slit made in the arrow-shaft (Text-fig. 9) and bound with fibre or skin binding (*simolto*). The shafts are made of the sosoiyat (bamboo), masaita, and koromandet trees, and are of an average length of 2 ft. There are three feathers (*kororik*, N.), which are split and trimmed, and fastened to the shaft by a spirally-bound cord (Text-fig. 8). The shaft immediately above the feathers is bound with skin *simolto*; the notch (*saita*) is shouldered, and bound over the shoulder with a skin *simolto*. The length of the feathers is 2 ins. to 2¾ ins. Arrows are kept in a quiver (Text-fig. 10) (*mootiet* N.; *mboñgit*) of leather, and about 2 ft. 3½ ins. long, with a leather cap and a sling for carrying it round the body. (For the position assumed by Dorōbo for shooting with the bow, *see* H.N., Pl. VII.)

Knives.—The iron blades are bought from the Nandi. They vary in length from 9 ins. to 12 ins., and are about 1¼ ins. wide. The handles are about 5 ins. long, of wood, with spiral marks cut in them, and covered with skin, which is pressed into the marks so that they show through the skin. The knives are carried in leather sheaths (*choket*, N.) which are attached to leather belts (*tapsienet*, N.) (Text-fig. 3).

(*b*) Leather.

Skins are dressed and trimmed, and furnish, besides articles of dress and bedding, quivers, sheaths and bags. The ordinary type of bag is called motoket. It is used for various purposes, including carrying honey: for honey-bags, the fur is removed. Bags for carrying other things are made of antelope skin (e.g. *kipseket*, blue duiker) with the fur left on, and flaps to shut them, which are fastened by a skin cord tied round the bag (Text-fig. 12). They are slung from the shoulders by a skin cord. Small bags are about 7 ins. by 6½ ins.; others are larger.

(*c*) Baskets (*kerepet*, pl. *kereponik* (N.)).

These are made by the women. They resemble Nandi baskets of the same name. The upright straws in the baskets are called taparik: the cross straws, sosik (N. = *Phœnix reclinata* palm). The bottoms are flat and are made of skin, which is sewn to the sides. Some have a handle of skin. The average depth of the baskets is 6 ins., width at top 6½ ins. (Text-fig. 21).

(*d*) Miscellaneous.

For carrying things in the forest, a contraption called lekwelet (N.) is used (Text-fig. 23). It consists of two oval objects somewhat like tennis-rackets fastened

together. The rim is made of a single stick bent in an oval and the ends bound together: across it are fastened pieces of tree-rope.[1] Grindstones (*litēto*, N.) have already been mentioned.

The Dorôbo have no knowledge of metallurgy, and they have no musical instruments, pottery, or, apparently, objects of ivory. Metal-work and pottery they buy from the Nandi.[2]

Trade and Commerce.

Trade is by barter. The Dorôbo give the Nandi baskets, dressed skins, and bows in exchange for ironwork, tobacco, pottery, beads, and other necessaries which they cannot produce themselves. There are no special market-places, but goods are taken to any place where there are Nandi, and there exchanged.

Land.

(i) *Tenure.*—The forest is divided by the elders into sections, and each family has its own section of forest. The boundaries between family holdings may be paths or rivers.

(ii) *Geographical Divisions.*—The Dorôbo divide their country into divisions called *koret*, pl. *korosuek* (N.). The chief divisions appear to be called Kipkorom, Sîrua, Kimurienge, Sosoiyo (bamboo, N. *tekat*), and Mokopich. The majority of the present place-names are Nandi.

The points of the compass are called as follows:—North and South: Murot (N.). East: Ye-torur (N. *ulin-durur* = up). West: Ye-'rek-to (= where(-the-sun)-descends-thither).

III.—Government.

The Kâmelîlo-Kâpchepkendi Dorôbo have now no chief. The last to hold office was Parñgetuny[3] arap Ñgamñgam, who was chief at the time of the Nandi Punitive Expedition, 1905. He is still alive, though he no longer holds office. The chief was elected, and the office was not hereditary. The chief (*kiruogindet* (N.)=councillor) was chosen for "ñgelyepta kitio" ("tongue only" = sense, ability and position). The only form of Government that exists now is a council of elders (*kiruoget ap poiisiek*, N.), who meet and decide on matters which are brought to them. They seem to have little power of enforcing obedience to their decisions, though they claim

[1] This is described and illustrated, although it is a Nandi use, since H.N. does not mention it.

[2] On the use of horns, *see* V, "Miscellaneous." These can hardly be considered as instruments of music.

[3] N. = lion-killer.

that continual disobedience is punished by expulsion from the tribe. They described their office in the following terms :—

Ke'ruoch ñgalek si kesich che mīyach ak che
We-take-counsel the-matters that we-may-get which-are good and which-are
yach, si ko-kas piik tukul. Ingoesio chiit'
bad that they-may-understand (-obey) the-people all. If-he-refuses the-man
ake tukul, ke-oon, si kwa emet ake.
other any, we-expel (-him) that he-may-go the-country other.

["We take counsel that we may find what is good, and leave what is bad, that all men may obey. If any refuse, he is driven out of our country."]

IV.—RELIGIOUS BELIEFS, MAGIC, AND MEDICINE.

Religion.

The religious beliefs of the Dorōbo are even vaguer than those of the Nandi. They believe in a god Asista (N.), who is the sun and masculine, and who has a sister Arawa* (N.), the moon.[1] No offerings are made to either, but the men pray to both before going on a hunt. The prayers seem to have one form :—

Asis,* ipiiy'-ech omdit.
God, fill-us-with the-food.

or,

Arawa,* ipiiy'-ech omdit.
Moon. fill-us-with the-food.

They believe also in ghosts and spirits (*oiindet*, pl. *oiik*, N.) which are good and bad. Prayers are addressed to the good oiik (*oiik che mīyach*) to obtain food and health, *e.g.* :—

Oiik, ipiiy'-ech omdit.
The-spirits, fill-us-with the-food.

Oiik, ipiiy'-ech sapot.
The-spirits, fill-us-with the-health.

Libations of honey and water (*logomek*)[2] and of honey-wine (*kipketīnik*, N.) are offered to the good oiik, in order to obtain food and health. These libations are made from gourds (*komda*), and while they are poured out, the formula,

Ipiiy'-ech omdit si kiipiiye sapot.
Fill-us-with the-food that we-be-filled-with health,

is pronounced.

[1] I have not come across this particular relationship before in the Nilo-Hamitic group; though other tribes of this group hold that the sun and moon are related, or are husband and wife (the latter Masae and Nandi). (*See* Beech, *The Suk*, for the ideas of the Suk, Enjemusi, Turkana, etc.)

[2] The Nandi offer milk.

When a man is ill and dies, it is said that bad oiik (*oiik che yach*, N.) have killed him; if he recovers, a good oiindet has saved him. No offerings are made to the bad oiik.

There is also a vague belief in a future life. A man's spirit is said to go at death to the *koret ap oiik* (N.), or land of the spirits, which is under the earth, and is a bad place.

Magic.

There are magicians (*pondindet*, pl. *ponik*, N.) who are bad, and who prevent people from getting food by means of their spells. There are also diviners (*orkoiyot*, pl. *orkoiik*, N.).[1] There is no equivalent of the modern Nandi system of "orkoinotet" or rule by a medicine-man.

Medicines and Charms.

(a) *Medicines.*—For snake-bite, the gum of the tiinet tree is used, mixed with the honey of a species of bee, called "kosomyot" (N.), and ram's fat. This concoction is rubbed on the affected part, and a little is also eaten. For coughs, a plant called "opeito" is chewed: this is used for all chest complaints.

(b) *Charms.*—Children wear a charm to ward off the evil-eye (*sakut*, N.), which is similar to that worn by Nandi children. It consists of a necklace of seeds of the lepuyuwet tree (N. *lapuonik*) strung on a cord, the seeds being separated by short pieces of bamboo (Text-fig. 20). Old men wear a charm to keep away rheumatism (*kimakunyet*, or *koroiito* (*koroita*), N.); it is made of two small pieces of the rērendet tree,[2] about 1 in. long, which are tied to the belt (Text-fig. 19).

V.—Social Institutions.

Social Divisions.

The male sex is divided into boys (*ñgetik*, N.), warriors (*murenik*, N.), and old men (*poiisiek*, or *apaiisiek*, N.): the female sex, into girls (*tîpik*, N.) and women (*korusiek*, or *chepiosôk*, N.). At circumcision, a boy becomes a warrior and a girl a woman.

Married and unmarried people sleep separately. Married people and small children may sleep in the same hut, while unmarried men sleep elsewhere, often in the sigiroinet (N.), or "warriors' hut," where they cohabit with the unmarried girls. Though free-love is practised, it is not carried to such an extent as among the Nandi, and although girls sleep with warriors, they like to preserve their virginity till circumcision. Warriors frequently marry their sweethearts (*mureriat*; N. *mureret*), whereas in Nandi they usually marry someone else.

The position of women is the same as it is among the Nandi, that is, they wait on the men, do all the menial work, and are their husband's property.

[1] This word is not used with the same sense in Nandi; originally it seems to have meant simply "medicine-man" (Swahili, *mganga*).

[2] *Euphorbia candelabrum*.

Clans.

The Dorōbo have eight clans (*oret*. pl. *ortinuek*, N.). which correspond to eight of the Nandi clans :—

Name.	Totem.	Meaning.	Corresponding Nandi Clan.
1. Moi	. . Koñgonyot (N.)	... *Crested crane*	... Moi.
2. Kipiegen ...	... Konokchot ...	... *Baboon* ...	... Kipiegen.
3. Kipsirgoi ...	... Toraet (N.) ...	.. *Bush-pig* ...	... Kipsirgoi.
4. Kipkenda ...	... Segemyat (N.)	... *Bee*	... Kipkenda.
5. Talai	. Sombut ...	... *Lion*	... Talai.
6. Koñgot ...	. Kipsekeriet ...	... *Snake* ...	... Kipaa.
7. Kipongoi[1] . .	... Changweretiet	... *Partridge* ...	... Kamwaike.
8. Kipasiso ...	. Asista (N.) ...	... *The sun* ...	... Kipasiso.

The Moi clan is the most numerous.

Circumcision Ages.

There are seven circumcision ages (*īpinda*. pl. *īpinuagik*), which have the same names as in Nandi : the intervals between the ages are about 10 years, and they succeed one another in a recurring cycle of about 70 years, as in Nandi, except that the Nandi intervals are 15 years (formerly 7½ years). The present order of the ages, and their names. are as follows[2] :—

7. Sawe (very old men)	Circumcised about	1877
6. Kipkoimet	,, ,,	1887
5. Kâplelach	,, ,,	1897
4. Kimnyike	,, ,,	1907
3. Nyongi (warriors)	,, ,,	1917
2. Maina (boys)..	Circumcision due	1927
1. Juma (small children)	,, ,,	1937

The old men speak of an eighth age, Kipayañg or Kipaañg, which has fallen out of use.

Each age is divided into three divisions (*mat*, pl. *mostinuek* (N.) = fire), which are called :—

1. *Senior.*—Chonginiek ((N.) Chañginiek, or Chañgen-opir).
2. *Middle.*—Taparik ((N.) Kipalkoñg).[3]
3. *Junior.*—Ruwakanik ((N.) Kiptoito).[3]

[1] In Nandi, Kipongoi is a "woman's name" for the Kamwaike clan. I could hear of no more than the eight clans given.

[2] In the Dorōbo dialect of Nandi these names are called also "Kipalkoñgek" and "Kiptoitoiek."

[3] *See* H.N. 12; G. W. B. Huntingford in *J.R.A.I.*, lvii, p. 426-428.

Names.

Before a child is born, the spirit of an ancestor is called upon, and the child receives the name of that ancestor, which he retains throughout his life.[1] At circumcision, a man becomes Arap (anum), "Son of (So-and-so)," *e.g.* a boy named Kipoo, whose father's name is Kimininǧ, becomes Kipoo arap (Ki)mininǧ, and is known as Arap (Ki)mininǧ. Both the masculine and femine names are mostly Nandi.

Circumcision. (Tum.* N.)

The customs connected with circumcision seem to be very similar to those of the Nandi. Boys are circumcised at intervals of about ten years: the ceremony takes place after harvest, about October, when extra food is bought from the Nandi: the actual operation is performed in the early morning. In the case of girls, a circumcision is held when there are sufficient girls in a district of an age to be circumcised: only the clitoris is removed. Circumcision, as among the Nandi, and in ancient Egypt, is a form of initiation into manhood or womanhood and is preparatory to marriage.

Marriage.

It is usual for Dorôbo to have only one wife, as they are unable to support more. The price of a wife is paid chiefly in honey-wine. Before marriage the suitor gives to the girl's father as much honey-wine "as four women can carry." He also gives the parents honey-wine year by year after marriage, and he must give the father caps (*sambut*, pl. *sambuisiek*) made of the skin of the tisiet monkey (*Cercopithecus albigularis*). Nowadays, if a Dorôbo has any cattle, he sometimes takes a second wife.

Death.

When a Dorôbo dies, his body is taken out into the forest, about 200 to 300 yards from his hut, and left for the hyænas (*kimaroket*) to devour.

Miscellaneous.

When a Dorôbo thanks a person, he spits in the direction of the person, with or without saying "*Kongoi*," N. ("Thanks").

The Dorôbo call each other in the forest by blowing horns of water-buck (*ikondit*, N.).

Salutations:—

(*a*) Of greeting:—To men. "*Sopai*": answer, "*Cham-ke*" (health). To girls and women. "*Tākwenya*": answer. "*Īgō*."

(*b*) Of farewell:—"*Saisere*" (good-bye): answer. "*Saisere ok ingi*" (good-bye to thee), or. "*Saisere ok okwek*" (good-bye to you).

Except "*Cham-ke*" as the answer to "*Sopai*," these are the same as in Nandi.

[1] The Nandi also give children "spirit-names" (*kamet ap oik*), which, however, are seldom used.

VI.—LANGUAGE.

The language of the Dorōbo is in structure a dialect of Nandi, which belongs, in point of development, to a stage between the Elgon dialects (Kony, Sapei, etc.) and Kipsikīs (or Lumbwa). While many of the words are either (i) more or less the same as in Nandi, or (ii) the same as in other dialects of Nandi, a number of words do not belong to the Nandi group at all, nor have I been able to trace them in other languages: the assumption is that they represent the remains of the original Dorōbo language. Māsae (especially Uasin Gīshu) has also contributed to the vocabulary

Grammar.

Letters.—The spelling is the same as that used in Sir A. C. Hollis's book. As in Nandi, *k* is often inclined to a *g*-sound: in such cases it is written *k*: *b* sometimes inclines to a *w*-sound. There is in some words a broad *a*-sound, here written *aa*, for which Nandi has *a*: the broad *aa*-sound which Hollis heard in Tanganyika appears here as *â*[1]: I could hear no trace of the replacement of *p* by *c* which he also heard. (N.H., p. xxviii.)

Accent.—The accent is equal on all syllables, as in Nandi.

Substantives.—As in Nandi, nouns have a primary form (without "definite article") and a secondary form (with "definite article").

The secondary suffix, or "definite article": (i) sing., -t, -ta, -to, -da, -do: (ii) pl., -ek, -eik, -ik, -uek.

Formation of the plural.

The general rules for the formation of the plural are as follows:—

(i.)

When the sing. endings are -et, -(i)at, the pl. ends in -es-iek.—

Singular.		Plural.		English.
Primary.	Secondary.	Primary.	Secondary.	
kochong-e	kochong-et	kochonges	kochong-es-iek	*hut*
toror	toror-et	toror-es	toror-es-iek	*cloud*
murer	murer-iat	murer-es	murer-es-iek	*sweetheart*

(ii.)

When the sing. endings are -it, -ot, -ut, -chot, the pl. ends in -is-iek.

leb	leb-it	leb-is	leb-is-iek	*buttock*
oldau	oldau-it	oldau-is	oldau-is-iek	*heart*
olmorondoi	olmorondoi-t	olmorondoi-is	olmorondoi-is-iek	*spear*
asingai	asingai-t	asingai-īs	asingai-īs-iek	*necklace*
konokcho	konokcho-t	konokcho-īs	konokcho-īs-iek	*baboon*
kumuri-o	kumuri-ot	kumur-is	kumur-is-iek	*biceps*
sambu	sambu-t	sambu-is	sambu-is-iek	*finger*

[1] Though occasionally *aa* is heard.

(iii.)

When the sing. ends in -ot, the pl. may end in -ōs-iek :—

Singular.		Plural.		English.
Primary.	Secondary	Primary.	Secondary.	
teget	teget-ōt	teget-ōs	teget-ōs-iek	*chest*

(iv.)

When the sing. ends in -at, -et, -it, or -ot, the pl. may end in -ek or -ik :—

arkech-a	arkech-at	arkech	arkech-ik	*flea*
ñgunyeny-o	ñgunyeny-ot	ñgunyeny	ñgunyeny-ek	*soil*
sik-o	sik-ot	sik	sik-ek	*dung*
swoñgin-o	swoñgin-et	swoñgin	swoñgin-ik	*coward*
kuut	kuut-iet	kuut	kuut-ik	*insect*
kiruk	kiruk-it[1]	kiruk	kiruk-ik	*penis*

(v.)

(*a*) When the sing. ends in -et, -u-et, -yuet, the pl. may end in -ōn-ik :—

kerep	kerep-et	kerep-on	kerep-ōn-ik	*basket*
simborokw-o	simborokw-et	simborok-on	simborok-ōn-ik	*girl*
ndapakw-a	ndapakw-et	ndapak-on	ndapak-ōn-ik	*leglet*
rokoi-yuo	rokoi-yuet	roko-on	roko-ōn-ik	*hartebeest*

(*b*) Sing. in -ut may have pl. in -ūn-ek :—

ser	ser-ut	ser-un	ser-ūn-ek	*nose*

(vi.)

When the sing. ends in -w-et, and, in one or two cases, -et, the pl. may be in -ōs-iek (-os-uek) :—

solomw-a	solomw-et	solom-ōs	solom-ōs-iek	*deformed person*
chambolu-a	chambolu-et	chambol-ōs	chambol-ōs-iek	*knife*
kor	kor-et	kor-os-ua	kor-os-uek	*country*

(vii.)

When the sing. ends in -et, the pl. is often in -ōk (for -oi-ik) :—

keru-o	keru-et	ker-oi	ker-ōk	*hollow*
lan-o	lan-et	lan-oi	lan-ōk	*horn*
tis-ia	tis-iet	tis-oi	tis-ōk	*monkey*

[1] For kiruk-it.

(viii.)

The sing. in -et, -iet, is sometimes followed by a pl -ai-ik, as in Nandi:

Singular.		Plural		English.
Primary.	Secondary.	Primary.	Secondary	
rotion	rotion-et	rotion-ai	rotion-ai-ik	*fore-arm*
wàtut	wàtut-iet	wàtut-ai	wàtut-ai-ik	*tail, broom*

(ix.)

When the sing. ends in -ta, -to, -da, or -do, the pl. generally ends in -u-ek:—

rob	rob-ta	rob-ua[1]	rob-uek[1]	*rain*
ai	ai-ta	oi-ua	oi-uek	*calf of leg*
melil	melil-to	melil-ua	melil-uek	*leopard*
matañg	matañg-da	matoñg-ua	matoñg-uek	*cheek*
tutuiñg	tutuiñg-do	tutuñg-ua	tutuñg-uek	*heel*

(x.)

The following, as in Nandi, are irregular:—

chii	chii-to	piich	pii-k	*man*
tie	tiep-to	tīp-in	tīp-ik	*girl*
tany	tê-ta	tich	tu-ka	*cow*
koñg	koñg-da	koñg-in[2]	koñg-ik	*eye*
tokoch	tokoi-ta[3]	tokōch	tokōch-ik	*face*
mā	mā-t	mo-s-tin-ua	mo-s-tin-uek	*fire*
omit	om-dit	omit-uag	omit-uagik	*food*
muik	muik-to	mu-en	mu-ēn-ik	*skin*
kel	kel-do	kel-ien	kel-iek	*leg*
kwen	kwen-et	kwen-us	kwen-us-iek	*centre*
kàt	kàt-it	kot-ua	kot-uek	*neck.*

Adjectives.—The pl. of adjectives is mostly formed by the suffix -ech or -ach, as in Kony:—

Bad, ya: pl. yāch.
Black, tuiuh: pl. tuen.
Cold, kaitit: pl. koititech.
Dirty, samis: pl somisech.
Few, ñgerinech
ma-ti-a
Fierce, korom: pl. koromech.
Good, mīye; pl. mīyach.
Hard, uiyuh: pl. uiyuyech.
Heavy, nyigis; pl. nyigisech.
High, long, koi; pl. koien.
Hot, purke: pl. purkeech.
Large, ō; pl echen.
Little, miniñg; pl miñgechen.
Many, much, chañg.
Other, ake: pl alak.
Red, pirir; pl. pirirech.
Sick, mioni: pl. miondos.
Unripe, tuon: pl. tuonech.
White, lêl: pl. lêlach.

[1] The pl. suffixes -ua, -uek are shortened forms of -uag, -uagik.

[2] The Nandi plural is konyen (konyek).

[3] For tokoch-ta, since both in Nandi and Dorobo, ch- before certain consonants becomes t- with great regularity.

Pronouns.—(i.) Personal :—

Used absolutely.		Object : verbal suffix.	
Ane, *I*	Achek, *we*	-an, *me*	-ech, *us*
Inye, *thou*	Akwek, *you*	-in, *thee*	-ak, *you*
Inendet, *he, she*	Icheket, *they*		

(ii.) Possessive, suffixed as in Nandi :—The same rules for the changing of letters apply :—

With the Singular.	With the Plural.	English.	With the Singular.	With the Plural.	English.
-nyôn	-chôk	*my*	nenyôn	chechôk	*mine*
-ñguñg	-kuk	*thy*	neñguñg	chekuk	*thine*
-nyin	-chik	*his*	nenyin	chechik	*his*
-nyon	-chok	*our*	nenyon	chechok	*ours*
-ñgwoñg	-kwok	*your*	neñgwoñg	chekwok	*yours*
-nyuan	-choak	*their*	nenyuan	chechoak	*theirs*

(iii.) Demonstrative, suffixed :—The same rules apply as in Nandi for the changing of letters with the use of these :—

Singular.	Plural.	English.
(1) ni, i	chu	*this, these*
(2) nin, in	chun	*that, those*
(3) no, o	cho	*this, these*
(4) non, on	chon	*that, those*

Nos. (3) and (4) are demonstratives of relative nearness.

(iv.) Demonstratives of place :—

Singular.	Plural.	English.
yu	uli	*here*
yun	ulin	*there*

All demonstrative pronouns may be intensified by means of the suffix -to or -tok *e.g.* ni-tok (this very (one)) ; uli-tok (at this very place).

(v.) Relative :—Sing., ne ; pl., che.

(vi.) Interrogative :—

Ata ? ..	*How many ?*	Ano ? ..	*Where ?*
Ne ? ..	*What ? What sort of ?*	Ñgô ? ..	*Who ?*
Auyon ? ..	*When ?*	Amu-ne ? ..	*Why ?*

Numerals.—These are the same as in Nandi:—

Akenge or akange ..	1	Taman	10
Oieñg	2	Taman ak akenge ..	11
Somok	3	Tiptem	20
Añgwan	4	Sosom	30
Mūt	5	Artam	40
Lo	6	Konom	50
Tisap	7	Pokol	60
Sisiit	8	Pokol oieñg 100 (anything over 60)	
Sokol	9		

Verbs.—The conjugation of verbs is very similar to that in Nandi. The present has a suffix -e or -i: and a-stems change to o- in the present tense. The negative prefix is ma, me, mo. When the 1st and 2nd pers. sing. and pl are used as the object, direct or indirect, they are suffixed to the verb:—

a-mach-in, *I want thee.*
i-mach-a, *thou wantest me.*
o-mach-ech, *you want us.*
a-mach-ak, *I want you.*

When the verb-stem begins with i, the i is omitted under the same conditions as in Nandi.

Conjugation.

ACTIVE VOICE.

(*a*) I-stems.—Isup, *(to) follow.*

Present.

	Affirmative.	Negative.		Affirmative.	Negative.
S. 1.	a-'sup-i	ma-a-'sup-i	*P.* 1.	ki-isup-i	ma-ki-isup-i
2.	i-isup-i	me-i-isup-i	2.	o-'sup-i	mo-o-'sup-i
3.	isup-i	me-'sup-i	3.	i-isup-i	me-'sup-i

Past.

S. 1.	ka-a-'sup	ma-a-'sup	*P.* 1.	ka-ki-isup	ma-ki-isup
2.	ka-i-isup	ma-i-isup		ka-ke-'sup	ma-ke-'sup
3.	ka-ko-'sup	ma-ko-'sup	2.	ko-o-'sup	mo-o-'sup
			3.	ka-ko-'sup	ma-ko-'sup

Subjunctive.

Affirmative.

S. 1.	a-'sup	*P.* 1.	ki-isup
2.	isup	2.	o-'sup
3.	ko'sup	3.	ko-'sup

Imperative.

Affirmative.	Negative.
isup. *follow*	me-'sup. *follow not*
o-'sup. *follow ye*	mo-o-'sup. *follow ye not*

(*b*) Other stems.—Sagas. (*to*) *hunt.*

Present.

	Affirmative.	Negative.		Affirmative.	Negative.
S. 1.	a-sogos-i	ma-a-sogos-i	*P.* 1.	ki-sogos-i	ma-ki-sogos-i
2.	i-sogos-i	me-i-sogos-i	2.	o-sogos-i	mo-o-sogos-i
3.	sogos-i	ma-sogos-i	3.	sogos-i	ma-sogos-i

Past.

S. 1.	ka-a-sagas	ma-a-sagas	*P.* 1.	ka-ki-sagas	ma-ki-sagas
2.	ka-i-sagas	ma-i-sagas	2.	ko-o-sagas	mo-o-sagas
3.	ka-ko-sagas	ma-ko-sagas	3.	ka-ko-sagas	ma-ko-sagas

Subjunctive.

Affirmative.

S. 1.	a-sagas	*P.* 1.	ki-sagas
2.	sagas	2.	o-sagas
3.	ko-sagas	3.	ko-sagas

Imperative.

Affirmative.	Negative.
sagas, *hunt*	me-sagas, *hunt not*
o-sagas, *hunt ye*	mo-o-sagas, *hunt ye not*

Examples of other verbs.

Present.	Past.	Subjunctive.	English.
a-cham-e	ka-a-cham	a-cham	*I love*
a-paal-e	ka-a-paal	a-paal	*I dig*
a-kuut-i	ka-a-kuut	a-kuut	*I blow*
a-uwech-e	ka-a-uwech	a-uwech	*I overturn*
a-wer-e	ka-a-wer	a-wer	*I throw*
a-sue	ka-a-sue	a-sue	*I know*
a-suwen-i	ka-a-suwen	a-suwen	*I see*
a-mwoi-i-	ka-a-mwai	a-mwai	*I say*

PASSIVE VOICE.

(*a*) I-stems.—Isup. *follow.*

Present.

S.	Affirmative.	Negative.	*P.*	Affirmative.	Negative.
1.	ki-isup-an, *I am followed*	ma-ki-isup-an	1.	ki-isup-ech, *we are followed*	ma-ki-isup-ech
2.	ki-isup-in, *thou art followed*		2.	ki-isup-ak, *you are followed*	
3.	ki-isup-i, *he is followed*		3.	ki-isup, *they are followed*	

Past.

1.	ka-ki-isup-an, *I was followed*	ko-ma-ki-isup-an	1. ka-ki-isup-ech	ko-ma-ki-isup-ech
2.	ka-ki-isup-in		2. ka-ki-isup-ak	
3.	ka-ki-isup		3. ka-ki-isup	

Subjunctive.

S. 1. ki-isup-an *P.* 1. ki-isup-ech

(*b*) Other stems.—Sagas, *hunt*.

Present.

S.	Affirmative	Negative.	P.	Affirmative.	Negative.
1.	ki-sagas-an, *I am hunted*	ma-ki-sagas-an	1.	ki-sagas-ech	ma-ki-sagas-ech.

Past.

1.	ka-ki-sagas-an, *I was hunted*	ko-ma-ki-sagas-an	1.	ka-ki-sagas-ech	ko-ma-ki-sagas-ech.

Subjunctive.

S. 1. ki-sagas-an P. ki-sagas-ech.

Derived verb-stems

(*a*) Motion hither (Proskinesis).—Suffix, un, -u: stem, ichom-, *go*.

Present.		*Past.*	
S.	*P.*	*S.*	*P.*
1. a-'chōm-un, *I come*	1. ki-ichōm-un	1. ka-'chōm-un, *I came*	1. ka-ki-ichōm-un
2. i-chōm-un	2. o-'chōm-un	2. ka-i-ichōm-un	2. ko-o-'chōm-un
3. ichōm-un	3. ichōm-un	3. ka-ko-'chōm-un	3. ka-ko-'chōm-un

Imperative.

S. ichōm-un, *come* P. o-'chōm-un, *come ye*

(*b*) Motion thither (Apokinesis).—Suffix -ten (-den).

Present.		*Past.*	
S.	*P.*	*S.*	*P.*
1. a-'chōm-doi-i, *I go*	1. ki-ichōm-doi-i	1. ka-a-'chōm-de, *I went*	1. ka-ki-'chōm-de
2. i-ichōm-doi-i	2. o-'chōm-doi-i	2. ka-i-ichōm-de	2. ko-o-'chōm-de
3. ichōm-doi	3. ichōm-doi	3. ka-ko-'chōm-da	3. ka-ko-'chōm-da

Imperative.

S. ichōm-den, *go* P. o-'chōm-den, *go ye*.

(*c*) Dative.—Suffix, -chin (-jin).

Present.		*Past.*	
S.	*P.*	*S.*	*P.*
1. a-roñg-jin-in, *I pour to*	1. ki-roñg-jin-in	1. ka-a-roñg-jin, *I poured to*	1. ka-ki-roñg-jin
2. i-roñg-jin-in	2. o-roñg-jin-in	2. ka-i-roñg-jin	2. ko-o-roñg-jin
3. roñg-jin	3. roñg-jin	3. ka-ko-roñg-jin	3. ka-ko-roñg-jin

This form is used when the indirect object is in the 3rd pers.; when it is in the 1st or 2nd pers., the form denoting "motion hither" is used, *e.g.*:—

roñg-jin engaret, *pour some water for (him)*.
roñg-u-an engaret, *pour some water for me*.

(*d*) Reflexive.—Suffix, -kei.

Present.		*Past.*	
S.	*P.*	*S.*	*P.*
1. a-'uun-i-kei. *I wash myself*	1. ki-iuun-i-kei	1 ka-a-'uun-gei	1. ka-ki-iuun-gei.

(*e*) Causal.—Prefix, i-.

Tonon, *stand*; i-tonon, *make to stand.*

This form is conjugated like ordinary i-stem verbs. (*See above.*)

(*f*) Reciprocal.—Suffix, -ien, -yen.

Present.			*Past.*	
S. 1. a-sis-tos-i. *I am silent with*	*P.* 1. ki-sis-tos-i		*S.* 1. ka-a-sis-ien	*P.* 1. ka-ki-sis-ien
2. i-sis-tos-i	2. o-sis-tos-i		2. ka-i-sis-ien	2. ko-o-sis-ien
3. sis-tos	3. sis-tos		3. ka-ko-sis-io	3. ka-ko-sis-io

Imperative.

S. sis-ien, *be silent with (someone else)* *P.* o-sis-ien, *be ye silent together.*

Adverbs, Prepositions, and Conjunctions.

Toror, *above.*
Ko-keny, *again.*
Ak, *and.*
Eñg, *at, in, to, from.*
Amu-ne, *because.*
Tae, *before (place).*
Lit, *behind.*
Iñgunyinyek, Ol'-irek-to } *below.*
Kwen, *between.*
Lō, *far.*
Oriit, *inside.*
Ker-ke, Kuu } *like.*
Achicha, *no.*
Toma, *not yet.*
Ngolen, *now.*
Ap. po, *of.*
Mandai, *out.*
Sor-chin (sor-un), *quickly.*
Mutio, *slowly.*
Ra, *to-day.*
Tumgwoiin, *day after to-morrow.*
Tun, *to-morrow.*
Misiñg, *very.*
Puch, *in vain.*
Ye, ole, *when, where.*
Ô, *yes.*
Amut, *yesterday.*
Oiin, *day before yesterday.*
Keny, ole-kinye, *of old.*

Vocabulary.

(*a*) Nouns.

In this vocabulary, nouns are given in full: the secondary forms are in brackets. Comparisons are given with Kony (Ko.), Sapei (Sap.), and Suk (Sk.); words of these

dialects are given in the secondary singular.[1] Mâsae words (M.) are given in the singular. When a word is the same as in Nandi, the letter (N.) is affixed. When a word is apparently original Dorōbo, the letter (D.) is affixed.

Afternoon lañgat (N.).
Animal tiony (tiondo) : pl., tiongin (tiongik) (N.).
Ankle kenere (keneret) ; pl., keneres (keneresiek) (D.).
Ant—
 Black . .. songōk (songōkiet) : pl . songōk (songōkik) (N.).
 White toiya (toiyat) ; pl., toi (toiik) (N.).
Ant-bear kūto (kūtet) : pl., kūtes (kūtesiek) (N.).
Antelope—
 Bush-buck .. keremai (keremaiit) : pl., keremaiis (keremaiisiek) (D.).
 Duiker ñgemwuyo (ñgemwuyot) : pl., ñgemwuis (ñgemwuisiek); Ko., ñgemwiyon-det.
 Duiker, blue .. kipseke (kipseket) : pl., kipsekes (kipsekesiek).
 Duiker, red .. minde (mindet) : pl., mindes (mindesiek) (N.).
 Reed-buck .. irukut (irukutet) : pl., iruketes (irukutesiek) (N.).
 Water-buck .. kipsomere (kipsomeret) : pl., kipsomeres (kipsomeresiek) (N.).
Arm kūs (kūsto) : pl., kūsua (kūsuek). N., kūsto = fore-leg ; Ko., kwisto.
Arm, fore rotion (rotionet) : pl., rotionai (rotionaiik) (N).
Armpit kulkul (kulkulta) : pl., kulkulua (kulkuluek) (N.).
Arrow mbunat (mbunatit) : pl., mbunatin (mbunatīnik) (D.).
 kôto (kôtet) : pl. kôti (kôtiek) (N.).
 kipchâpo (kipchâpet) : pl., kipchâpon (kipchâponik) (N.).
 kiperio (kiperiot) : pl., kiperen (kiperēnik) (N.).
Arrow-head .. kipchâpo.
Arrow binding .. simol (simolto) : pl., simolua (simoluek) (N.).
Ashes mbuyangat (mbuyangatik) (D.).
Axe ndolu (ndolut) : pl., ndolus (ndolusiek). M., en-dolu.
Back . .. suwe (suwet) : pl., suwenut (suwenutik) (N.).
Bag motok (motoket) : pl., motokes (motokesiek) (D.).
Bank—
 of river ingekut (ingekutiet) (N.).
 opposite piton-in : pit (pitit).
Bark perto (pertet) : pl., per (perik) (N.).
Barrel (honey) .. pasan (pasanet) : pl., pasan (pasanik) (D.).
Basket kerep (kerepet) : pl., kerepon (kerepōnik) (N.).

[1] Suk, having no secondary forms, is given in the singular

Bat reres (reresiet) ; pl., reresai (reresaiik) (N.).
Bead sonaiya (sonaiyat) ; pl., sonai (sonaiek) (N.).
Bed itôk (itôkto) : pl., itôkua (itôkuek) (N.).
Bee segemya (segemyat) ; pl., segem (segemik) (N.).
Beetle toruog (toruoget) ; pl., toruoges (toruogesiek).
Bell oltongor (oltongorit) ; pl., oltongoris (oltongorisiek) (M.).
Bell (leg) kipisas (kipisasit) ; pl., kipisasis (kipisasisiek) (D.).
mpitiko (mpitikoït) ; pl., mpitikoïs (mpitikoïsiek) (D.).
Belly engaiyai (engaiyait) ; pl., engaiyaiis (engaiyaiisiek) (M.).
Belt entorei (entoreit) ; pl., entoreïs (entoreïsiek) (M.).
Biceps kumurio (kumuriot) ; pl., kumuris (kumurisiek). Sap. has murion-det = fore-arm.
Bird tarit (taritvet) ; pl., tarit (taritik) (N.).
Blood olodoi (olodoit) (M.).
Bone kôwo (kôwet) ; pl., koi (koiik) (N.).
Boundary punge (punget) ; pl., punges (pungesiek) (D.).
Bow kuyañg (kuyañgda) ; pl., kuyañgwa (kuyañgwek). Ko. has. kuyañg-da : Sap., kiaiñg-da ; Sk., kwôañg ; N., kwanget
Boy weiri (weirit) ; pl., weirin (weirik) (N.).
Breast—
Man teget (tegetôt) ; pl., tegetôs (tegetôsiek) (N.).
Woman mbutwoi (mbutwoit) : pl., mbutwoiis (mbutwoiisiek) (D.).
Bridge kisame (kisamet) ; pl., kisames (kisamesiek) (D.).
Broom wâtut (wâtutiet) ; pl., wâtutai (wâtutaiik).
Brother kesem (kesemda) : pl., kesemua (kesemuek). (*Cf.* Ko., kasanda (kasandet) = cousin.)
Buffalo tieptatui (tieptatuit) : pl., tieptatuis (tieptatuisiek) (D.).
Bull arakiblich (arakiblichit) ; pl., arakiblichis (arakiblichisiek). (D.).
Bullock ei (eito) : pl., eiin (eiik) (N.).
Buttock leb (lebit) : pl., lebis (lebisiek).
Calabash sot (sotet) : pl., soton (sotônik) (N.).
Calf moi (moita) : pl., moii (moiek) (N.).
Cap engerai (engerait) : pl., engeraiis (engeraiisiek) (M.).
Cap (old man's fur) sambu (sambut) : pl., sambuis (sambuisiek) (N.).
Cat esiminjai (esiminjait) : pl., esiminjaiis (esiminjaiisiek) (M.).
Cat (serval) kesogoror (kesogororet) : pl., kesogorores (kesogororesiek) (N.).
Cheek .. . matañg (matañgda) : pl., matoñgua (matoñguek) (N.).
Chief kiruogin (kiruogindet) ; pl., kiruog (kiruogik) (N.).
Child lakwa (lakwet) : pl., lakoi (lakôk) (N.).

Chin tamna (tamnet) : pl.. tamnoi (tamnōk) (N.).
Circumcision .. tum (tumdo) (N.).
Cloud . .. toror (tororet) : pl.. tororos (tororesiek). (From toror = above ; *cf.* N.. turur = above.)
Cold . .. koris (koristo) (N.).
Collar-bone.. . malingot (malingotiet) : pl.. malingotai (malingotaiik) (N.).
Consultation . kiruog (kiruoget) (N.).
Cord . .. porōwa (porōwet) : pl. porōon (porōōnik) (N.)
Cough lal (lalek).
Country . . em (emet) : pl.. emotinua (emotinuek) (N.).
Cousin—
Maternal.. .. apulaiya : māma.
Paternal .. bāba.
Cow tany (têta) ; pl.. tich (tuka).
Cowry . .. olpukainyeiya (olpukainyeiyat) : pl.. olpukainyeiis (olpukainyeiisiek) (M.).
sekerio (sekeriot) ; pl.. seker (sekeriek) (N.).
Crab kipkaporio (kipkaporiot) : pl.. kipkaporioïs (kipkaporioïsiek) (D.).
Crocodile makau (makauta) : pl.. makaua (makauek). (Makau in Nandi dialects means a hippopotamus.)
Dance tien (tiendo) ; pl., tienuag (tienuagik) (N.).
Darkness mesundei (mesundeito) (N.).
Dawn korūn. (Keyu. karōn : Sap.. koriōn.)
Day ekôn (ekônet) : pl.. ekônes (ekônesiek) (N.).
pēt (pētut) ; pl.. pētus (pētusiek) (N.).
Daylight .. . pēt.
Deformed person .. solomwa (solomwet) : pl.. solomōs (solomōsiek). N.. salua.
Den, cave .. ngapunai (ngapunait) : pl.. ngapunaiis (ngapunaiisiek). M., eng-apune.
Desert .. . kēwo (kēwet) : pl.. kēwōs (kēwōsiek) (N.).
Devil .. . chemos (chemosit) : pl.. chemosis (chemosisiek) (N.).
Dew.. . .. rēwo (rēwot) (N.).
Dirt sim (simdo) : pl.. simua (simuek) (N.).
Dog ñgôk (ñgôkto) ; pl.. ñgôk (ñgôkik) (Ko.). Sap.. ñgôgit. Kipsikis. ñgôkta. Perhaps the same with Sk.. kuki.
Door .. . kurkat (kurket) : pl.. kurkot (kurkotik) (N.).
Dust . .. temburio (temburiot) (N.).
Ear iit (iitit) ; pl., iitin (iitik) (N.).
Ear (hole in top of) engeber (engeberit) ; pl.. engeberis (engeberisiek). Ko., ingeberit. Sap.. ingeberiondet.

Earth (soil) .. ñgunyenyo (ñgunyenyot): pl., ñgunyeny (ñgunyenyek). N., ñguñgunyat. Ko., nyañgweniek.
Elbow tegei (tegeito): pl., tegeiua (tegeiuek) (D.).
Elephant pēlio (pēliot): pl., pēl (pēlek) (N.).
End tapan (tapanda); pl., tapanua (tapanuek) (N.).
Enemy punyo (punyot); pl., pun (punik) (N.).
Entrail akutan (akutaniet): pl., akutan (akutanik) (N.).
Evening karap: koimen (N.).
Evil eye sakut (N.).
Excrement siko (sikot): pl., sik (sikek). Ko., sigek = ox-dung.
Eye koñg (koñgda); pl., koñgin (koñgik) (N.).
Face tokoch (tokoita): pl., tokōch (tokōchik) Ko., tokoch, tokoita.
Falsehood lokoiua (lokoiuek) (N.).
Fat mwai (mwaita): pl., mwan (mwanik) (N.).
Father bāba.
Father, my (man speaking) .. pamoñgo (N.).
Father, my (woman speaking) .. pakwo (N.).
Fearful person .. swoñgin (swoñginet): pl., swoñgin (swoñginik) (D.).
Feast-day kambak (kambakta): pl., kambakua (kambakuek) (N.).
Feather kororia (kororiet): pl., koror (kororik) (N.).
Finger .. . morna (mornet): pl., morin (morik) (N.).
Fire .. . mā (māt): pl., mostinua (mostinuek) (N.).
Firestick piin (piinet): pl., piines (piinesiek). N., piōnet.
Firestick (soft stick) tasam (tasamet): pl., tasames (tasamesiek).
Firewood kwendo (kwendet): pl., kwen (kwenik) (N.).
Fist kotulukut (kotulukutiet): pl., kotulukut (kotulukutik). N., lukutiet. Ko., kotuluget. Sap., tulukutyet.
Flea arkecha (arkechat): pl., arkech (arkechik) (D.).
Flower .. tapta (taptet); pl., taptoi (taptōk).
Fog kiptunge (kiptunget): pl., kiptunges (kiptungesiek) (D.).
Food .. omit (omdit): pl., omituag (omituagik) (N.).
Fool aposan (aposanet) (N.).
Foot . . kel (keldo): pl., kelien (keliek) (N.).
Foot (sole) keltepes (keltepesyet) (N.).
Ford tapar (taparta): pl., taparua (taparuek) (N.).
Foreigner too (toot): pl., toi (toiek) (N.).
Forest .. . samak (sameita)[1]: pl., samakua (samakuek) (Ko.). Sap., sameita: pl., sameiuek.

[1] For samak-ta; the Sap. primary form is samei.

Friend . . chorua (choruet) : pl.. choronoi (choronōk) (N.).
Frog . . kimasyari (kimasyarit) : pl.. kimasyaris (kimasyarisiek) (D.).
Garment . akur (akuriet) : pl.. akures (akuresiek). (*Cf.* N.. inguriet.)
Generation . īpin (īpinda) : pl., īpinua (īpinuek) (N.).
Geographical division kor (koret) : pl., korosua (korosuek) (N.) (for the pl.. *cf.* Sap.. korōsiek).
Gift . . . melek (melekto) : pl.. melekua (melekuek) (N.).
Girl simborokwo (simborokwet) : pl., simborokon (simborokōnik) (D.).
tie (tiepto) ; pl., tīpin (tīpīk) (N.) (for the secondary sing.. *cf.* Ko.. kiepto).
Goat chepkwoch (chepkwochet) : pl.. chepkwocheis (chepkwocheisiek) (D.).
God . . asis (asista) ; pl.. asisua (asisuek) (N.).
Good-bye saisere (N.).
Grain . . . olbai (olbaiek). (Sap., paek. N., pāk. M.. olpaeki.)
Grass samsam (samsamiet) : pl.. samsam (samsamik) (D.).
kesaket (kesaketiet) ; pl.. kesaket (kesaketik) (D.).
Grasshopper . . chemonjorua (chemonjoruet) ; pl., chemonjoroi (chemonjorōk) (N.).
Gratis puch.
Grey hair . . . kalual (kalualet) ; pl., kaluales (kalualesiek). (N.. kalualiet.)
Grindstone . litē (litēto) ; pl., litēua (litēuek) (N.).
Groin palia (paliet) ; pl., palioi (paliōk) (N.).
Haft . . kunyuk (kunyukto) ; pl.. kunyuk (kunyukik). (As N.. except the secondary sing.. where N. has kungit.)
Hail koiya (koiyat). N., koiiyot. Sap., koiiyat.
Hand rubei (rubeito) ; pl.. rubeuia (rubeiuek) (N.).
Head . . esikoyoi (esikoyoit) : pl.. esikoyoïs (esikoyoïsiek) (D.).
Health . . . sapo (sapot) (N.).
Heart oldau (oldauit) ; pl.. oldauis (oldauisiek). M.. ol-tau.
Heaven toror (tororet).
Heel . . . tutuiñg (tutuiñgdo) : pl., tutuñgua (tutuñguek). Ko.. chichiñgdo. Sap.. titiñgdo.
Hen ingok (ingokiet) : pl.. ingokai (ingokaiik) (N.).
Hide, ox . . . muik (muikto) : pl.. muen (muēnik). N., muito ; pl., muiuek. Ko., muito : pl.. muēnik.
Hill tuluo (tuluet) ; pl., tulondoi (tulondōk) (N.).
Hip lip (lipit) ; pl.. lipis (lipisiek) (Ko.. leb-it : pl., lebisoi. Sk., lep : pl.. lepisei) : kôwet-ap-lip.
Hippopotamus . . makas (makasta) : pl.. makasua (makasuek) (N.).

Hole kering (keringet) ; pl., keringon (keringônik) (N.).
Hollow keruo (keruet) : pl., keruoi (keruôk) (D.).
Honey kumia (kumiat) (N.).
Honey and water .. logome (logomek) (D.).
Honeycomb .. kipiririt (kipiriritvet) ; pl., kipiririres (kipiriritesiek) (D.).
Honey-wine .. kipketin (kipketînik) (N.).
Hoof siiya (siiyet) : pl., sioi (siôk) (N.).
Horn lâno (lânet) : pl., lânoi (lânok) (D.).
House kochonge (kochonget) : pl., kochonges (kochongesiek) (D.).
Hunger ilcho (ilchet) (D.).
Hunt sagas (sagasta) : pl., sagasua (sagasuek). Ko. kip-saga-ian, hunter.
Hunter kiplokotio (kiplokotiot) : pl., kiplokot (kiplokotik) (N.).
Husband manoñgotio (manoñgotiot) : pl., manoñgot (manoñgotik) (N.).
Hyæna kimarok (kimaroket) ; pl., kimarokes (kimarokesiek) (D.).
Idle person .. chiito ne nyara.
Illness korot (koroito) ; pl., koroiua (koroiuek) (N.).
Abscess mô (môet) : pl., môoi (môôk) (N.).
Boil .. . undir (undiriet) : pl., undir (undirik) (N.).
Cold lolio (loliot).
Dropsy mpuras (mpurasta) (N.).
Rheumatism . olbai (olbait) (M.).
Sore throat .. kipkawamook (kipkawamookit).
Insect kuut (kuutiet) : pl., kuut (kuutik) (N.).
Iron karna (karnet) : pl., karin (karik) (N.).
Jackal leluo (leluot) : pl., lelue (leluek) (N.).
Jar soiyo (soiyet) : pl., soiyes (soiyesiek) (N.).
Jaw nasiringoiya (nasiringoiyat) : pl., nasiringoïs (nasiringoïsiek) (D.).
Kidney .. . soromya (soromyet) : pl., soromoi (soromôk) (N.).
Knee kutuñg (kutuñgdo) : pl., kutuñgwa (kutuñgwek) (N.).
Knife chamboluа (chamboluet) ; pl., chambolôs (chambolôsiek) (N.).
Language .. . lokoiyo (lokoiyot) : pl., lokoiyua (lokoiyuek) (N.).
Leaf sogo (sogot) : pl., sog (sogek) (N.).
Left katam (N.).
Leg kel (keldo) : pl., kelien (keliek) (N.).
Calf of ai (aita) ; pl., oiua (oiuek) (N.).
Fore narobroba (narobrobait) : pl., narobrobaïs (narobrobaïsiek) (D.).
Hind chât (châtit) ; pl., châtin (châtik) (N.).
Shin korok (korokta) : pl., korokwa (korokwek) (N.).

Leglet (girl's) .. ndapakwa (ndapakwet) : pl.. ndapakon (ndapakōnik) (N.).

Leopard melil (melilto) : pl.. melilua (meliluek). (Nandi dialects mostly have mehldo. Sk.. meril.)

Lightning koliel (kolielet) : pl.. kolieloi (kolielōk) (N.).

Lion sombi (sombit) : pl.. sombis (sombisiek) (D.).

Liver emunywai (emunywait) : pl.. emunywaiis (emunywaiisiek) (M.).

Lizard cheringis (cheringisiet) ; pl.. cheringisai (cheringisaiik) (N.).

Log suben (subenet) . pl.. subenai (subenaiik) (N.).

Lover sanya (sandet) · pl.. san (sanik) (N.).
ochôpen (ochôpenit) . pl.. ochôpenis (ochôpenisiek) (D.).

Lover (girl) murer (mureriat) ; pl.. mureres (mureresiek) (N.).

Lung puonyo (puonyot) : pl.. puon (puonik) (N.).

Magic chepkericho (chepkerichot) (N.).

Man chii (chiito) ; pl.. piich (piik) (N.).

Man (old) olmoruokcho (olmoruokchot) : pl.. olmoruokis (olmoruokisiek). M.. ol-moruo : pl.. il-moruak.
apaiye (apaiyet) : pl.. apaiis (apaiisiek).

Marrow kutot (kutotet) : pl.. kutotis (kutotisiek) (D.).

Matter (pus) .. pururut (pururutik) (N.. purutek).

Meat nyanya (nyanyait) : pl.. nyanyaïs (nyanyaisiek).

Medicine kericho (kerichot) . pl.. kerich (kerichek) (N.).

Middle kwen (kwenet) : pl.. kwenus (kwenusiek) (N.).

Milk chê (chêko) (N.).

Monkey—

Baboon . .. konokcho (konokchot) : pl.. konokchoïs (konokchoïsiek) (D.).

Cercopithecus albigularis — tisia (tisiet) : pl.. tisoi (tisōk) (N.).

Cercopithecus griseo-viridis — chepkiroinyo (chepkiroinyet) ; pl., chepkiroinyes (chepkiroinyesiek) (D.).

Colobus saire (sairet) ; pl.. saires (sairesiek) (D.).

Moon arawa (arawet) ; pl.. arâ (arawek) (N.).

Morning . . korun.

Mosquito .. . tingwich (tingwichet) : pl., tingwich (tingwichik) (N.).

Moss . . kechinchir (kechinchiriet) ; pl., kechinchir (kechinchirik) (D.).

Moth . . tapurpur (tapurpuriet) : pl.. tapurpur (tapurpurik) (N.).

Mother . .. kōko : eiyo (N.).

My mother (man speaking) — pôkine.

My mother (woman speaking) — eiyo.

Mouth kut (kutit) : pl., kutua (kutuek) (N.).
Nail (finger) .. siiya (siiyet) : pl., sioi (siōk) (N.).
Name kaina (kainet) : pl., kainoi (kainōk) (N.).
Nape of neck .. keringich (keringichet) : pl., keringicheïs (keringicheïsiek) (D.).
Navel kâpwal (kâpwalda) : pl., kâpwalua (kâpwaluek) (N.).
Neck kât (katit) : pl., kotua (kotuek) (N.).
Necklace asingai (asingait) : pl., asingaïs (asingaïsiek) (N.).
Neighbour takowos (takowosit) : pl., takowosis (takowosiek) (D.).
Net (trap) porôwo (porōwet) : pl., porōon (porōōnik) (N.).
Neutral land .. melel (melelet) : pl., meleles (melelesiek) (D.).
Night mesundei (mesundeito) : pl., mesundeiua (mesundeiuek) (N.).
Nose ser (serūt) ; pl., serūn (serūnek) (N.).
Ostrich tiond'-ap-songol (N.).[1]
Ox tany (têta) ; pl., tich (tuka).
Paint (clay) --
Brown, red .. erokoi (erokoit) : pl., erokoiis (erokoiisiek) (D.).
White eworio (eworiot) : pl., ewor (eworik) (N.).
Partridge changweret (changweretiet) : pl., changweretes (changweretesiek) (D.).
Penis kiruk (kirkit) : pl., kiruk (kirukik). N. = bull.
Penis (uncircumcised) monyis (monyiset) ; pl., monyis (monyisik) (N.).
Perspiration .. kaot (kaotik) (N.).
Phlegm seper (seperik) (N.).
Pig tora (toraet) : pl., toroi (torōk) (N.).
Pig (giant) tum (tumda) ; pl., tumua (tumuek) (N.).
Pipe, tobacco .. teret-ap-tumatet ; pl., terēnik-ap-tumatet (N.).
Pit (trap) ngure (nguret) ; pl., ngures (nguresiek) (D.).
Plain oñgata (oñgatet) (N.).
Poison ñgwon (ñgwonit) (N.).
Porcupine sabit (sabitet) : pl., sobit (sobitik) Ko. Sap., sabetet ; pl., sabitik. N., sabitiat = quill.
Porridge kimio (kimiet) : pl., kimoi (kimoiik) (N.).
Powerful person .. kauwel (kauwelet) : pl., kauweles (kauwelesiek) (D.).
Prostitute kiplelkoñg (kiplelkoñgyat) : pl., kiplelkoñgis (kiplelkoñgisiek).
Purgative seketet (seketetik) (N.).
Quiver mboñg (mboñgit) : pl., mboñgis (mboñgisiek) (D.).
moot (mootiet) : pl., mootoi (mootōk) (N.).
Rabbit nakutil (nakutilit) : pl., nakutilis (nakutilisiek) (D.).

[1] = "The-animal-of-the-ostrich-feather."

Rain rob (robta) : pl.. robua (robuek) (N.).
Rat muria (muriat) : pl.. mur (murek) (N.).
Rat (mole) nturumetyo (nturumetyot) : pl.. nturumetis (nturumetisiek) (D.).
Razor kipchâpet-am-metit.
Rhinoceros .. kipkam (kipkamit) : pl.. kipkamis (kipkamisiek) (D.).
Rib karas (karasta) : pl., korosua (korosuek) (N.).
Right (side) .. tae (N.).
Ring (ear) olaimer (olaimeriat) : pl.. olaimeres (olaimeresiek) (M.).
kimeitai (kimeitaiit) : pl.. kimeitaiis (kimeitaiisiek) (N.).
River ilos (ilosto) : pl.. ilosua (ilosuek) (D.).
Road or (oret) : pl.. ortinua (ortinuek) (N.).
Root tīkītio (tīkītiot) : pl.. tīkīt (tīkītik) (N.).
Saliva ñgul (ñgulek) (N.).
Scar soremyo (soremyet) : pl.. sorem (soremik) (D.).
Seed kesua (kesuot) : pl.. kesui (kesuek) (N.).
Shade, shadow .. tomirimir (tomirimiriet) : pl.. tomirimirai (tomirimiraiik) (N.).
Sheep olgine (olgineit) : pl., olgineiis (olgineiisiek) (M.).
Sheep (ram) .. enturume (enturumeët) ; pl.. enturumeës (enturumeësiek) (Kikuyu ndurume).
Shield loñg (loñget) : pl., loñgotinua (loñgotinuek) (N.).
Shoulder rukumbo (rukumbet) : pl., rukumbon (rukumbōnik) (D.).
Side komas (komasta) : pl.. komosua (komosuek) (N.).
Sister *See* "Girl."
Skin (human) .. iririo (iririot) : pl.. iriren (irirēnik) (N.).
Skirt chepkaiyu (chepkaiyuit) : pl.. chepkaiyuis (chepkaiyuisiek) (N.).
Skull takungu (takungut) : pl.. takungus (takungusiek) (N.).
Smoke iye (iyet) ; pl.. iyes (iyesiek) (N.. iyet*).
Snake kipseker (kipsekeriet) : pl., kipsekeres (kipsekeresiek) (D.).
Python indara (indaret) : pl.. indoroi (indorōk) (N.).
Puff adder .. kipinchuse (kipinchuset) : pl.. kipinchuses (kipinchusesiek) (N.).
Snuff olaisuk (olaisukit) (M.). Ko. has "oloisiogit."
Son *See* "Child."
Son of arap (N.).
Song esingolyo (esingolyoit) ; pl.. esingolyoïs (esingolyoïsiek). M., e-singōlio.
Spear olmorondoi (olmorondoit) : pl., olmorondoiis (olmorondoiisiek) (M.).

Star tapoiya (tapoiyat) : pl.. tapoi (tapoiik) (N.).
Stick kiruk (kirukto) : pl.. kirukua (kirukuek) (N.).
Stone koii (koiita) : pl.. koii (koiek) (N.).
Sun cheptalil (cheptalilit) ; pl.. cheptalilis (cheptalilisiek) (N.).
Sword wesek (wesekto) : pl.. wesekua (wesekuek) (D.).
Tail wâtut (wâtutiet) : pl.. wâtutai (wâtutaiik).
Testicle tolkêlyo (tolkêlyot) : pl.. tolkêl (tolkêlik) (D.).
Thief chorin (chorindet) : pl.. chor (chorik) (N.).
Thigh kupes (kupesto) : pl.. kupesua (kupesuek) (N.).
Thing kii (kiito) : pl.. tukun (tukuk) (N.).
Thirst melel (melelda) (N.).
Throat mook (mookto) ; pl., mookwa (mookwek) (N.).
Thunder ilat (ilet) : pl.. ilot (ilotik) (N.).
Tinder sasya (sasyat) (D.).
Tobacco tumato (tumatet) ; chepkochût (chepkochûtit) (N.).
Tobacco-box .. kiprauwi (kiprauwit) ; pl.. kiprauwis (kiprauwisiek) (N.). Ko. chep-kiraut. Sap.. in-giraut = snuff-box.
Tongue olgeche (olgecheit) ; pl., olgecheiis (olgecheiisiek) (M.).
Tooth kelda (keldet) : pl.. kelat (kelek) (N.).
Tree ket (ketit) : pl.. ket (ketik) (N.).
Udder sorio (soriet) : pl.. soroi (soroiik) (D.).
Vagina kâpin (kâpiniet) : pl., kâpin (kâpînik) (N.).
War (raid) lug (luget) : pl., luges (lugesiek) (N.).
Warrior muren (murenet) : pl., muren (murenik) (N.).
Water engare (engaret) ; pl., engares (engaresiek). M.. engare.
Wife .. . *See* "Woman."
Wind .. . usoon (usoonet) : pl., usoonai (usoonaiik) (N.).
Witch-doctor .. ponin (ponindet) ; pl., pon (ponik) (N.).
Witch-doctor (diviner) orkoiyo (orkoiyot) ; pl., orkoi (orkoiik) (N.).
Woman korko (korkot) ; pl., korus (korusiek) (N.).
Barren soon (soonet) : pl.. soonotinua (soonotinuek) (N.).
Married .. . yôsôtio (yôsôtiot) : pl., yôsôt (yôsôtik) (N.).
Old engitog (engitogit) : pl., engitogis (engitogisiek). M., engitok = the wife.
Word lokoiyo (lokoiyot) : pl.. lokoiyua (lokoiyuek) (N.).
Wrist walel (waleldo) ; pl.. walelua (waleluek) (N.).
Year keny (kenyit) : pl., kenyis (kenyisiek) (N.).
Zebra oloitigo (oloitigoit) ; pl., oloitigoïs (oloitigoïsiek) (M.).

(*b*) Verbs.

Verbs are given in their stem (*i.e.* the imperative sing.) only. The following, after a verb, denote that it is a derived stem, and conjugated as described in the Grammar under the heading which is affixed to it :—Pros. = motion hither. Apo. = motion thither. Dat. = dative. Rf. = reflexive. Cs. = causal. Rp. = reciprocal.

Able (be)	imūch (N.).	Copulate	kum (N.).
Abuse	chup (N.).	Cough	lal (N.).
Angry (be)	nereket (N.).	Count	iit (N.).
Answer	iyan (N.).	Cry	rer (N.).
Arise	ñget (N.).	Cut	til (N.).
Arrive	it-un (N.) (Pros.).	Delay	ikaa-kei[1] (N.) (Rf.).
Ascend	lany (N.).	Die	*S.* 1. a-me (N.).
Ask	tepen (N.).		*P.* 1. ki-pek-un (N.).
Assist	toret (N.).	Dig	paal (N.).
Be	mi (N.).	Do	yai (N.).
Bear (fruit)	ii (N.).	Drink	iye (N.).
Beat	pir (N.).	Drunk (be)	pôkit (N.).
Beckon	ñgwech (N.).	Dwell	meny (N.).
Beg	som (N.).	Eat	am (N.).
Blink	mismis (N.).	Enlarge, increase	tes (N.).
Blow	kuut (N.).	Enough (be)	yam (N.).
Bore	parpar (N.).	Extinguish fire	mis (N.).
Box ears	rapach (N.).	Fall	iput (N.).
Break	iri (N.).	Fatigued (be)	ñget (N.).
Break wind	kwot (N.).	Fear	iyuei (N.).
Breathe	ipus (N.).		muen (D.).
Brew	riech (N.).	Fight	pir-kei (N.) (Rf.).
Bring	ip-un (N.) (Pros.).	Fill	inyêt (N.).
Build	tech (N.).	Fill with food	ipiiy-en[2] (N.) (Rp.).
Burn (act)	pel (N.).	Filled with food (be)	piiy-en.[2]
Buy	al (N.).	Finish (act)	tar (N.).
Call	kur (N.).	Finished (it is)	ka-ko-pek (N.).
Carry	ip (N.).	Fold	aruny (N.).
Chop	yep (N.).	Follow	isup (N.).
Circumcise	muratan (N.).	Forget	yutie (N.).
Close	ker (N.).	Get	sich (N.).
Come	ichōm-un (M.) (Pros.).		
Cook	kwany (N.).		

[1] *Present*, a-'kooikei.

[2] These two verbs are irregular : *Present*, a-piiy-onyi : *Past*, ka-a-puy-e. The first is the Cs. of the simple form.

Give	kôn : ikôchi (irreg. as in Nandi).
Go	ichōm-den (M.) (Apo.).
Grind	ñga (N.).
Growl ..	moror (N.).
Have	tinye (N.).
Hear	kas (N.).
Hunt	sagas
Hurt	am (*e.g.* am-a esikoyoit, *my head hurts me*).
Ill (be) ..	mian (N.).
Kill	par (N.).
Kindle ..	inam : ilal (N.).
Know ..	sue (D.).
Laugh ..	rori (N.).
Leap	toromben (N.).
Let alone ..	met-ten (N.) (Apo.).
Love	cham (N.).
Marry ..	itun (N.).
Meet	nyor-un (N.) (Pros.).
Open	yat (N.).
Overturn ..	uwech (N.).
Pour	roñg (N.) ; roñg-un (N.) (Pros.) ; roñg-jin (Dat.).
Prepare ..	yai-ten (N.) (Apo.).
Put	in-de(n) (N.) (Apo.). konor (N.).
Quiet (be) ..	sis (N.).
Rain	robon (N.).
Refuse ..	yesien (N.).
Remain ..	tepi (N.).
Remember ..	ipwat (N.).
Remove ..	nem-un (N.) (Pros.).
Return (act) ..	iwech (N.) (Cs.).
Return (intrans.)	we-i-kei[1] (N.) (Rf.).
Ripen ..	rur-ien (N.) (Rp.).
Run	lapat (N.).
Say	mwai (N.) ; ile (N.).
Say to	mwa-un (Pros.). mwa-chin (Dat.).
Scowl	injurur (N.).
Search ..	cheñg (N.).
See	suwen[2] (D.).
Sell	al-ten (N.) (Apo.).
Sew	nap (N.).
Shoot	mwog (N.).
Shut	ker ; rat (N.).
Sleep	ru (N.). ru-ien (Rp.).
Smell (act) ..	iñgu (N.).
Smell (intrans.)	ñgu-ten (Apo.).
Spit	ñgutut (N.).
Spoil	ñgem (N.).
Stand	tonon (N.).
Steal	chor (N.).
Sweep ..	ipūch (N.).
Take, hold ..	nam (N.).
Throw	wer (N.).
Tie	rat (N.).
Travel	ru-ten (N.) (Apo.).
Understand ..	kas (N.).
Unfasten ..	yat (N.).
Untie	itiach (N.).
Upset	turur-ten (N.) (Apo.). tum-den (N.) (Apo.).
Wait	kany (N.).
Walk	wend-ote[3] (N.).
Want	mach (N.).
Wash	iuun (N.).
Wash oneself ..	iuun-gei (Rf.).
Well (be) ..	sap (N.).
Yawn .. .	ime (N.).
Yell (shout) ..	wach (N.).

[1] *Present*, a-we-chi-kei.

[2] *Cf.* Sk. sow-, *see*.

[3] *Present*, *S.* 1. a-wend-oti : *P.* 1. ki-pend-oti.

Note.—In the foregoing vocabulary the letter (N.) does not necessarily mean that the equivalent Nandi word has exactly the same meaning or the same form as the Dorōbo word. In several cases the Nandi words have quite different meanings, though referring to the same sort of thing as the Dorōbo word, *e.g.* "mesundeito," the Dorōbo for "night," means in Nandi, "darkness when there is no moon." And when, *e.g.*, "paal" is marked (N.) it does not necessarily follow that the Nandi is "paal" (in this case the Nandi is "pal"). The object of the indication is to show what words are to be considered Nandi, what words are to be considered dialect, and what words Masae.

Examples of Dorōbo. (True Dorōbo in italics.)

Ker-oti *Okiek* si ko-*sue* *kochongesiek*
They-are-walking-about-looking-at the-Dorōbo that they-may-know the-huts
chepo piik ap *sameita*.
which-are-of the-people of the-forest.

Ma-ngo-mi *sombisiek* *samakuek* korosue-chu.
Not-and-there-are the-lions (in) the-forests (in) countries-these.

Mi-i *kisamet* ne lony-e *ilosto*.
There-is the-bridge which it-crosses the-river.

Ki-ichōm-doi-i *ki-sagas* añg *ñgókik*.
We-go that-we-may-hunt with the-dogs.

Ko'len *olmoruokchot* A-mach-e *simborokwet* *ko-chōm-un* si ko-ram
And-he-says the-old-man I-want the-girl that-she-comes that she-may-draw
engare.
the-water.

Ki-pendi *samak*[1] ki-*sagas* toraet ne meny-e ye mi-i
We-go forest we-hunt the-bush-pig which it-dwells where there-is
oldamiyoit.
the-olive-tree.

VII.—List of Trees and Plants.

Dorōbo.	Nandi.	Botanical Name.
chelumbut	ēwât	
chepkeipet		
chesicheiyot	chesicheiyet	
choruet ketit-ap-īnanik	choruet	*ficus* sp.
kāposwet	serengwet	
kâput-kalial	kâpkiloluet	

[1] In Mr. Hobley's vocabulary of Ravine Dorōbo (*Man*, 1905, 21), the phrase "kibendi samak," lit. "we go to forest," is given for "hunt."

Dorōbo.	Nandi.	Botanical Name.
keliot	keliot	*acocanthera Schimperi.*
kesainet	serkutiet	
ketuyuwet	martit	
kipeichekwet	siriat	
kipkomotet	kipkoskosit	
kipsepuet	kipsepuet	*tilia* sp.
kiptililiet	kipuimetyet	
kiseruet	kuseruet	*sedum* sp.
koropanyat	kormanyat	
kuriot	kuriot	
kwâmereryet	chepsañgainet	
laropat	ket-ē-ka	
lemeiyuet	lamaiyuet	*ximenia americana.*
māchet	soiyet	
marorto	sakomwet	
masaita		
mindeyuet	masiririet	*polygonum senegalense.*
moiyuet	cheptangolik	parasite, tree-rope.
momonyat	momonyot	*rubus rigidus.*
mukupchot	lepekwet	*dracæna* sp.
ndorokyat		
ñganasyat	chepkeleliet	
nyaldet	kipsutiet	parasite, tree-rope.
olchapalait	chepītet	
oldamiyoit	emdit	*olea chrysophylla.*
ororuet	teldet	*ficus* sp.
pōpōnet	siksiket	
porōwet	silipchet	*dombeya* sp.
rērendet	kuresiet	*euphorbia candelabrum.*
rosopeiyet	leltonget	*abutilon indicum.*
saptet	tarakwet	*podocarpus* sp.
sāsuriet	sasuriet	*musa ensete.*
seet	seet	
senetwet	senetwet	*cassia didymobotrya.*
señgseñgwet	seseiyat	
sestuet	katet : sertuet	*acacia robusta.*
sitotwet	sitotyot	
soboitit	simotuet	*ficus* sp.
sosoiyat	tekat	*arundinaria alpina.*
sumbeiyuet	sumbeiyuet	

Dorōbo.	Nandi.	Botanical Name.
susuek ("grass")	sekemetyet	moss.
taptet	setyot	
teet	tarakwet	*juniperus procera.*
tegeltīt	indakariat	*acanthus arboreus.*
tenetwet	tenduet	
tepengwet	tepengwet	*æmilia integrifolia.*
teresyat	teresyat	
tiinet		
tilolwet	tilolwet	bracken.
tyemnowet	chemnoet	

VIII.—List of Tribe Names.

Dorōbo.—Okio (Okiot): pl., Oki (Okiek.).
Elgeyo.—Keyo (Keyot): pl., Keyu (Keyek).
European.—Asungio (Asungiot): pl., Asungu (Asunguk.).
Kavirondo.—Lemin (Lemindet): pl., Lem (Lemek).
Kipsikīs, Lumbwa.—Kipsikīsin (Kipsikīsindet); pl., Kipsikīs (Kipsikīsiek). il-Kakesanŷ.
Màsae. Uasin Gīshu.—Ipkwapcho (Ipkwapchot); pl., Ipkwap (Ipkwapek.).
Nandi.—Meyuo (Meyuot): pl., Mee (Meek).[1]
"Sirikwa."—Kapcheptuen.

IX.—The Physical Features of the Dorōbo.[2]

By the Hon. P. L. O'Brien, M.A.

The physical features of the Dorōbo are not particularly distinctive, nor do they differ to any great extent from their neighbours the Nandi. There are, however,

[1] It is curious to note that this word is applied by the Suk to the Dorōbo; by the Nandi to any agricultural tribe; and by the Masae to the Bantu "savages." It has no connection, as is sometimes thought, with the N. Lemek = "the Kavirondo peoples in general," the stem of which is lem-, and the real meaning "boy."

[2] For physical types, *see* Pls. XXVI–XXVIII. These photographs were taken by the Hon. P. L. O'Brien.

one or two features which are worth mentioning: but these are far more likely to be due to environment than to be true racial distinctions.

The Dorōbo are usually small in stature, averaging about 5 ft. 6 ins.: this, however, may be accounted for, because, like the Wambuti (Congo Pygmies), they are forest-dwellers.

The Dorōbo, like the Nandi and other Nilo-Hamitic peoples, are dolichocephalic, although not markedly so, and in some cases even inclined to mesocephaly. Their skulls tend to slope up from a rather flat frontal bone to the occipital, giving one rather the impression of very slight artificial cranial deformation. Unfortunately, we were unable to obtain any specimens of their crania: but, even if we had, I believe it would have been almost impossible to distinguish them from any Nandi specimens.

For a black race their noses are narrow, being distinctly leptorrhine, with a well-formed bridge: this may be accounted for by the fact that, although they live actually on the Equator, they live at an altitude of from 8,000 to 9,000 ft. in the dense forest, where it never really gets hot, and at night it is bitterly cold: hence they show very little tendency towards the true platyrrhine nose, so intimately associated with the tropics. On the whole, the lips of the Dorōbo appeared somewhat thinner than those of the Nandi.

Colour of Skin.—The younger children, who presumably have never been out of the forest, were of a distinctly lighter colour than the average (*cf.* Congo Pygmies). Otherwise the Dorōbo were of the same colour as the Nandi.

That the Dorōbo are habitually bearded, and have hair on their bodies and legs, is an absolute fallacy. It is true, however, that several of the old men whom we met had beards, but no more so than their Nandi neighbours. We met none with hair on their bodies or legs.[1]

Hair.—In hair classification the Dorōbo are typical Ulotrichi.

Artificial Deformation and Mutilation.—The Dorōbo, like most Nilo-Hamites, pierce and elongate the lobes of the ears, and it was interesting to note that, in a great many cases, among the old men, these lobes had been broken by being caught by branches in the forest.

The Dorōbo usually extract the two middle incisor teeth of the lower jaw. They also practise circumcision and clitoridectomy.

[1] We emphasize this point, because there seems to be an idea that the Dorōbo are a "bearded" people, *e.g.*, Mr. Hobley in *Man*, 1905, 21, p. 39. Whatever other sections of the Dorōbo may be, the Kāmelīlo-Kāpchepkendi certainly are not more bearded than any other tribe.

In conclusion, I do not consider that the physical characteristics of the Dorōbo throw much light upon the controversy as to their origin. These characteristics tend, if anything, to indicate that they are a Nilo-Hamitic race, which has been somewhat altered by environment.[1]

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[1] In the foregoing paper no remark has been made as to the "false" Dorōbo. There are a large number of people of all sorts of tribes, who have taken to the woods, and live as outlaws, mostly on account of some misbehaviour. The numbers of true Dorōbo have probably been swelled also by people from the tribes next to whom they dwell, *e.g.*, Masae, Nandi, etc. But these additions to the numerical strength of a section are by no means Dorōbo, though they may be so in name. And I cannot accept Merker's view of the origin of the Dorōbo. (*Die Masai*, pp. 6–9, 221, etc.; Miss Werner's review of Hollis, *The Masai*, in *Man*, 1905, 62, p. 109.) Merker's work is not, I believe, very reliable, and he seems to be a rather prejudiced observer. The physical characteristics which we have noted may, perhaps, be taken as one indication among others that the Dorōbo we met were true Dorōbo, and not outlaws of other tribes. The effects of environment are not likely to make themselves visible in a few years only. The fact that three Dorōbo vocabularies (luckily recorded by Mr. Hobley, *loc. cit.*) show that the true Dorōbo language is similar to Nandi in structure, may, I think, be taken as some evidence against those who maintain that the Dorōbo of Mau, E-uasoñgiro, Kenya, Salēta, etc., are formed mostly of outlaws from neighbouring tribes.—[G. W. B. H.]



FIG. 1.—ELDER WEARING FUR CAP "SAMBUT."

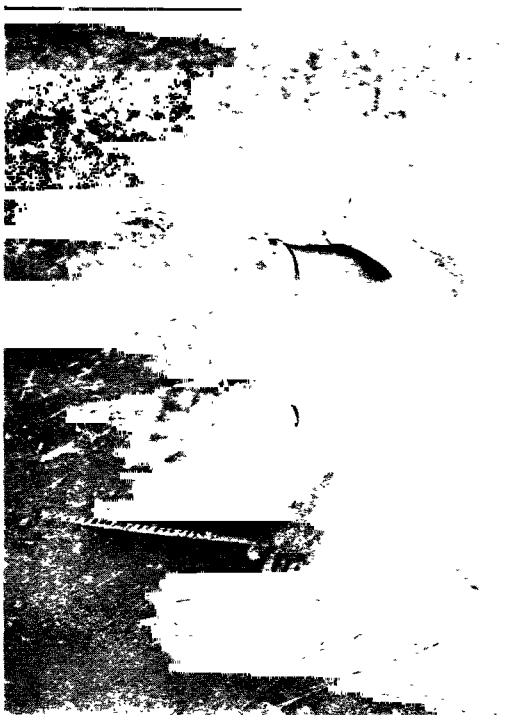


FIG. 2.—ELDER MAKING FIRE WITH FIRESTICKS "PIINET."



FIG. 3.—OLD WOMAN "ENGITOGIT," WEARING EAR-RINGS "TAŌK," DENOTING THAT HER HUSBAND IS STILL ALIVE.



FIG. 4.—TWO GIRLS "SIMBOROKŌNIK." THE GIRL ON THE SPECTATOR'S LEFT IS WEARING A NECKLACE OF "LEPEYUWET" SEEDS AS A CHARM AGAINST THE EVIL EYE; THE NECKLACE IS OF THE NANDI TYPE. THE GIRL ON THE RIGHT WEARS A BEAD DECORATION ON HER HEAD OF A NANDI TYPE. BOTH ARE WEARING "KETIK-AP-IITIK," OR BLOCKS OF WOOD IN THE EARS.

MODERN HUNTERS.



FIG. 1.—TWO ELDERS "OLMORUOKISIEK." THE MAN ON THE SPECTATOR'S RIGHT, WEARING A WHITE NECKLACE, IS ARAP ÑGAMÑGAM, THE FORMER CHIEF.



FIG. 2.—TWO ELDERS AND A WARRIOR; THE LATTER, NAMED ARAP KIMINIÑG, IS THE FIGURE ON THE SPECTATOR'S LEFT.



FIG. 3.—FOUR ELDERS.

MODERN HUNTERS.



1 2 3 4 5 6

FIG. 1.—GROUP OF WOMEN AND CHILDREN OUTSIDE A HUT. NOS. 1 AND 2, MARRIED WOMEN "YŌ-ŌTIK"; NOS. 3, 5 AND 6, GIRLS; NO. 4, A BOY.



FIG. 2.—HUT "KOCHONGET."



FIG. 3.—THE COUNTRY ON THE EDGE OF THE FOREST, SEEN FROM SOSOIYO. NANDI HUTS WITH NANDI-IZED DORŌBO HUT (ON LEFT) IN FOREGROUND.

RAIN-MAKING ON THE RIVER MOREHEAD.

[With Plates XXIX and XXX.]

By F. E. Williams,

Government Anthropologist, Territory of Papua.

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Introductory.

It is the purpose of the present paper first to describe the apparatus and the technique of rain-making on the River Morehead, Papua, and secondly to attempt some interpretation of them. Many details—though I believe these are mostly of a minor character—have so far defied any explanation that I can offer: but the larger part of the rain-maker's art, his stock-in-trade, as well as his routine procedure and its oral accompaniment, seem to become intelligible partly by reference to the ordinary principles of magic and partly by reference to an elaborate mythology or body of religious belief.

The first part, viz. the description of rain-making, is as full as my information allows: the last, viz. the citation of certain mythological beliefs as explanatory of the rain-maker's methods, must involve a strict selection. It is impossible to give the whole of a long and somewhat chaotic mythology in the course of a journal article, so I am compelled to adduce only those more or less disjointed parts of it which seem to fit the purpose.

I.

Environment.

The people of whom I am writing may be called the Kuramangu. They occupy part of the country, some twenty miles inland, between the Wassi Kussa and Morehead rivers, almost in the extreme south-west corner of Papua. It is a flat country which varies in the course of every year between the severest extremes of climate. The yam and the taitu, which form the staple diet of its inhabitants, require a wet season and a dry season, and they get both with a vengeance. Between the months of December and May the monotonous plain is often under a knee-deep flood for mile after mile: in the height of the dry season it is so parched that the traveller must carry his water on the track. But the tropical alternation, fairly reliable as it is, remains subject to interruption by rains belated or untimely, which either delay or injure the yam crops: and under such conditions weather-magic assumes a real importance. When I was in the district every meteorological rule should have made it bone dry, but a succession of unexpected downpours had actually made it impassable with water, so that I watched with more than usual sympathy the activities of the sun-magicians, and felt I could willingly contribute to the curses flung at the Buji people in the east who were supposed to be responsible for our predicament.

Sun- and Rain-Magic.

Whatever the reason, sun-magic is performed overtly while rain-magic is always wrapped in secrecy. One may see the paraphernalia of the former—bamboo water-containers with their red paint and their white cockatoo feathers—hung up in full view of the village—in fact, within the village itself. The place of the rain-maker, on the other hand, is hidden away in the damp recesses of the bush, where none save the magician and his collaborators would dare to approach. It is, of course, possible that each of these professions should be misdirected toward an anti-social end, but on the whole they are regarded as reputable, in that they purport to meet a recurrent need of the community. The only reason I can offer for the open character of the one and the secret character of the other, is that this other, viz. rain-making, alone makes use of certain apparatus which is closely bound up with the sacred mythology of the tribe, and thus is rendered highly sacrosanct. Sun-making, as far as I can make out, is explicable on the ordinary principles of magic: rain-making demands, in addition, some appeal to the supernatural personalities, and to explain its ritual we must lay under contribution the religious beliefs of the people.

Professional Rain-Makers.

All the important weather-magic is in the hands of certain hereditary practitioners, some of whom specialize in the making of fine weather, others in the making of rain.

while in some cases the two professions are combined. The rain-maker usually inherits his calling from his father, and passes it on to his son in accordance with the order of a strictly patrilineal society. Of the three rain-makers with whose work this paper is to deal, one, Yawes, named as his predecessors his true father, and, before him, his grandfather; and his successor was to be his eldest son Sarau. It is permissible for the nearer male relatives of the rain-maker to visit his laboratory, or *nu-poki-wabu*, and perhaps to act as assistants or understudies to him. In the case of Yawes, his son Sarau might have been called an apprentice: he was *au fait* with the procedure and, as far as it went, the theory of the rain-maker's art, and it was due to this circumstance, combined with the fact that he had earlier attached himself as local assistant to my cook-boy, that I was eventually privileged to see his father's *nu-poki-wabu* and learn something of his methods. (Pl. XXIX, Figs. 1 and 2.)

The second *nu-poki-wabu* referred to in this paper belonged to Wengu, who, like Yawes, lives in the village of Bebedeben. He had as collaborator his brother Yeremb, who, though taking second place, was qualified or entitled to perform the ritual. By way of credential it is sufficient to state that Yeremb was once laid out almost insensible by a stroke of lightning while actually at work in the *nu-poki-wabu*, a circumstance to which his fellow-villagers ascribe the baldness which we may observe in the picture. (Pl. XXX.)

The third *nu-poki-wabu* is that of the old man Bute of Mata, whose assistant—a very competent one who seemed to show rather more intelligence than the principal—was his adopted son Agal. These two, as sometimes happens, were sun-makers as well as rain-makers, and they volunteered the information that many people came to them with requests both to bring rain and to drive it away, and made payment of food, tobacco, and fish caught in the Morehead.

The Laboratory of Yawes.

I shall proceed to describe the three *nu-poki-wabu* in some detail, and then give a more or less composite account of the actual methods which are adopted in these places to make the rain.

Yawes works by the small stream Enga-enga-marivam, which flows by Bebedeben at some 500 yards distance. Leading off the main track one may observe a light pad which is never trodden by unprivileged feet, and following this a little distance one will come to a small clearing beside the creek. This is the scene of Yawes' activities. It is dank, dark, and horribly mosquito-ridden: in size not more than 20 ft. by 30 ft. and hemmed in by tall trees whose trunks are disfigured by many scars. On the ground are two shallow oblong troughs, and, resting on a low rack of saplings, an odd assortment of stones and shells. The troughs are 7 ft. or 8 ft. apart, and orientated roughly at right angles; the rack of stones lies more or less between them. (Text-fig. 1.)

Round about the ground is littered with split coconuts and sheets of ragged bark.

The two troughs, or *nu poki*, are each about 3 ft. by 2 ft., and, say, 1 ft. deep. They are made of stout logs packed round with clay and sheets of bark, the latter (*karowe*) being the invariable roof-thatching material of the district, thin, pliable, and water-tight. The reason for there being two troughs rather than one is that they are respectively called into use for different phases of the weather. The one marked *a* in the figure was said to be employed when the wind *Kuwal*[1] was blowing, *i.e.* the north-west, or west-by-north, wind: *b* was used for *Pawei*, i.e. the north, or perhaps the north-east, wind.

I visited the *nu-poki-wabu* in the dry part of the year, when rain was not required and when rain-making would have been quite a nefarious proceeding. The trough *b*

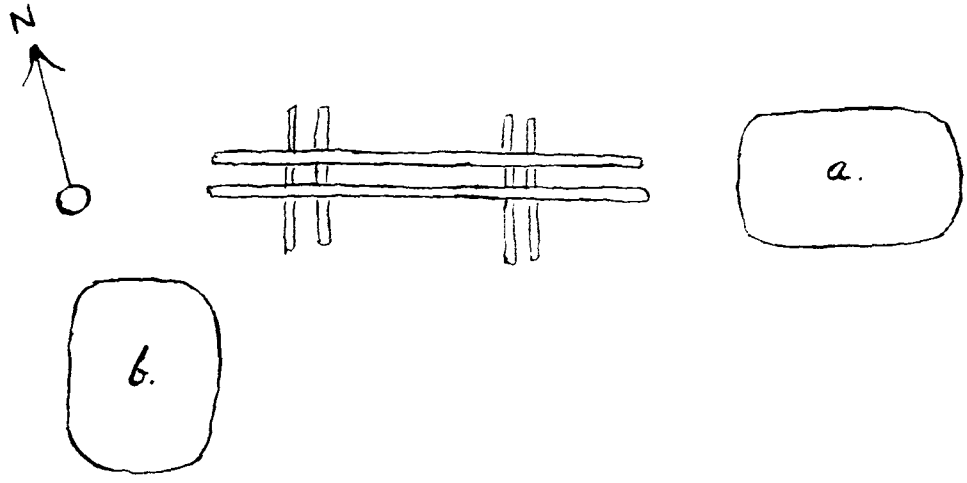


FIG. 1.

was then empty, while *a* contained a dirty hotch-potch wherein could be distinguished fragments of crocodile skull and green turtle shell together with numerous *muil*, or nuts of the Nipa palm. The fact that one was empty while the other was more or less full, means simply that the latter had been more recently in use and had not been cleaned out. Strewn about each trough and the whole clearing were the large white bivalves called *eta*.

The stones, etc., deserve a detailed description. They were set out very neatly on three pairs of poles, the arrangement of which may best be understood from Text-fig. 2. The stones are elevated about 8 ins. above the damp earth, and it appears that each has its proper position on the rack, for although Yawes allowed me to handle them without demur, he quietly corrected my mistake when I inadvertently put them down again in the wrong place.

[1] Elsewhere commonly called *Burumbura*. *Kuwal* may be the esoteric name (*vide infra*).

Each of the ten objects has a proper name, and the majority of them symbolize or represent some phenomenon of the heavens.

(1) "*Semai.*"—A large specimen of white fusus shell (*jemberi*) measuring about 12 ins. My informants were unable to explain the meaning of the name *Semai*, which I have not heard in any other connection. Unfortunately I did not make a note on the spot, but in a more or less connected account written up a day or two after my visit I find the words: "Without having made a note of it, I think that the *Semai* shell was a symbol of, or identified with, *Burumbura*, the north-west wind." This species of shell—though always a much smaller example of it, not more than about 5 ins. in length—is occasionally used for a phallocrypt, as an alternative for the more common *melo* shell. When giving a demonstration of his methods Yawes wore it in

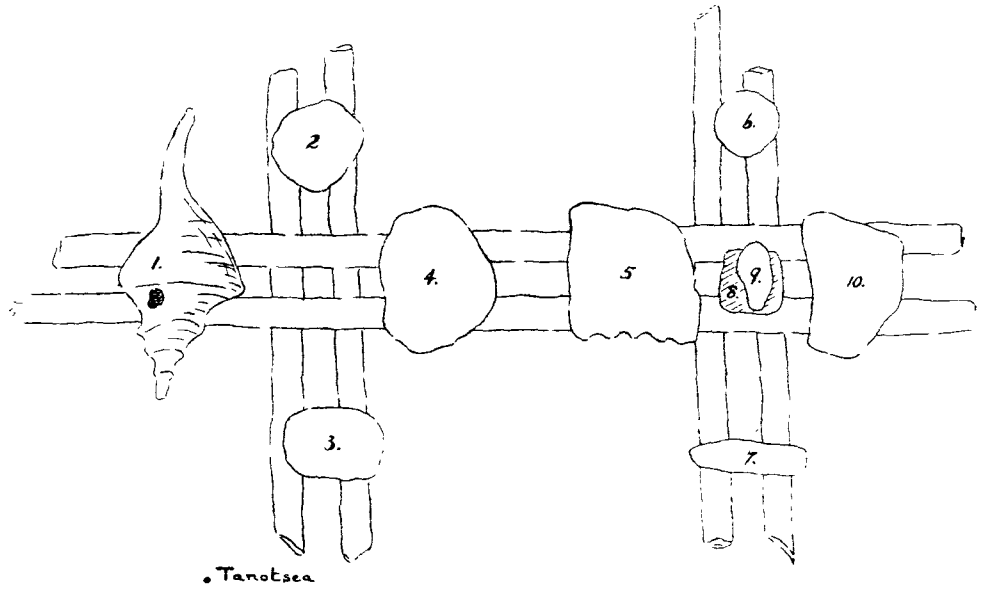


FIG. 2.

this capacity, in which it necessarily looked absurdly large. It is worth mentioning that these large specimens of *jemberi* are frequently to be seen in villages of the district tied to croton bushes or sometimes set up on poles, and that the natives attach some secret importance to them, showing a tendency to put them out of sight and a reluctance to give any information about them. In this particular especially I feel myself completely beaten, and unable to decide in the end whether they were refusing to give information or whether, perhaps, they had no information to give.

(2) "*Pawei.*"—An irregular hemisphere of grey granite, rather pock-marked at one end as if it had been used as a hammer-stone, was identified with the north-wind (*Pawei*).

(3) "*Wawr.*"—Another granite block stood for the south-west wind (*Wawr*). It bore an artificial groove apparently caused by the sharpening of stone axes: but no symbolic meaning was attached to this feature.

(4) "*Eram.*"—A block of light-coloured granite on which were to be seen several grooves (similar to the above and probably due to the same cause), and two small depressions which seem to have resulted from hammering. *Eram* is the esoteric name for *ewaha*, the sun: that is to say, it is the name used mainly on ritual occasions or in the recounting of myths, and only among initiated males, for the heavenly body which in the common speech of the village, that of women as well as men, is called simply *ewaha*. *Eram*, the sun, appears in the myths as a woman, and this stone bears one or two marks to help out the symbolism in the shape of the above-mentioned grooves. The two lateral ones, forming a **V**, were said by Yawes to represent the two stripes, one on either cheek converging toward the chin, which are distinctive of Bangu face-painting: for *Eram* was a Bangu woman, *i.e.* she belonged to the moiety of the Kuramangu people which is so called. The groove between them, as he first gave me to understand, represented her breast-bone (*tikupwar*), and the small depression at the end of it the supra-sternal notch (*boki*). But later he professed that they together constituted *Eram's* vulva (*kutir*), while a small hole on the other side of the stone was her anus—a sudden change of interpretation which he defended by saying he was too shy to tell me the truth at first. The question remains whether these symbolic interpretations are really set, or whether they are not mere flashes of imagination struck out of Yawes' mind by an unexpected question.

(5) "*Bangi.*"—A squarish stone of light-grey granite, bearing on one side a series of four parallel grooves. This stone represents the moon (*Bangi*), the word being once more an esoteric substitute for the every-day name, viz. *harai*. The moon is male, and its importance in Kuramangu belief will be dealt with later on when we come to examine the myths. These will also give some significance to the four parallel grooves, which are said to have been made by *Gainjan*, the Creator's sago-scraper.

(6) "*Besa.*"—A ball of pink granite is identified with the star of that name. I can only say this was a bright planet which my astronomy provisionally distinguished as either Venus or Jupiter.

(7) "*Yemanj.*"—A more or less cylindrical pebble of slate broken off at one end and said to have been originally much longer. This represents the two stars *Yemanj*, i.e. the "Pointers" to the Southern Cross.

(8) "*Bave.*"—A celt of basalt. This was said to be no symbol, but the identical axe-blade with which *Gainjan* cut down the black palm (*sakr*) from whose interior the Kuramangu and all the neighbouring peoples were liberated.

(9) "*Wana.*"—A fragment of white limestone in the form of an irregular crescent. This was said to represent, apparently by virtue of its shape, the hooked beak of the hawk *Wana*, the principal totem of the Bangu moiety of the Kuramangu.

(10) "*Penaha-bant.*"—A flat formless slab of sandstone which represents the stars of that name, three in number. From the description given me, I took them to be those of Orion's Belt, though the constellation was not visible at the time.

One last detail in Yawes' laboratory attracted my attention. This consisted in a series of torches, little rolls of inflammable bark tied to sticks, which were planted in the ground about the clearing to the number of five or six. Their significance, of which Yawes and his son gave me a somewhat garbled account, will become more or less clear by reference to one of the myths.

The Laboratory of Wengu.

Gulijebgund the rain-making laboratory of Wengu, was in all essentials the same as that of Yawes. Concealed in the bush at no great distance from the other, it possessed two troughs orientated in accordance with the directions of two prevalent winds, and between them three poles lay parallel on the ground supporting, once more, a collection of stones and shells.

In this instance the two troughs or *aa-poki-wabu* were said to do service respectively for the north-west wind (*Kiwal*) and the south-east (*Wawr*)—a disposition which, it will be noted, does not agree with that of Yawes. In this instance I felt almost inclined to doubt the definite statement of my informants, which may have possibly been dictated by a desire to make the point clear by nominating two winds that were directly opposite. At any rate, the native does not usually look to the south-east for his rain, nor does he usually desire it during the south-east season. However, I have perhaps doubted my informants unnecessarily, and we shall have to take Wengu's word for it that one of his troughs was for *Wawr*, the south-easter.

Whereas the other was empty, this one still held a quantity of water in which were to be distinguished the lower jaw of a crocodile, and half the lower jaw of another—this latter a specimen of extraordinary size; several of those broad ungainly leaves known as "elk-horns" (*burne*); many pandanus seeds (*mwil*); fragments of fish-net, rotten with their long immersion in the water; branches of two shrubs called respectively *jumb* and *marua*; and lastly some fragments of *wangap* or wild ginger.

The thirteen stones were set out as in Text-fig. 3, with a large white *jemberi* shell on either flank. These two shells stood for *Bangi*, the moon, and *Eram*, the sun. The stones were named as follows:—

(1) "*Kiwal.*" The north-west wind.
(2) "*Wawr.*"—The south-east wind.
(3) "*Besa.*"—A star (Mars).

(4) "*Penaha-bant.*"—Stars (Orion's Belt ?).
(5) "*Mereji-mereji.*"—(The Little Girls), *i.e.* The Seven Sisters.
(6) "*Keinjol.*"—A star.
(7) "*Pawei.*"—The north wind.
(8) "*Yemanj.*"—Stars (the "Pointers" to the Southern Cross).
(9) "*Pobajer.*"—The south wind.

The remaining four Wengu was apparently unable to identify. Apart from these, it will be seen that we have the sun, the moon, five stars or constellations and four winds.

Of the whole thirteen, none showed much sign of manipulation, except No. 3, a fragment in which a hole was bored to the depth of half an inch, apparently with the original intention of making a club-head. In several others were to be seen slight depressions, probably the result of hammering.

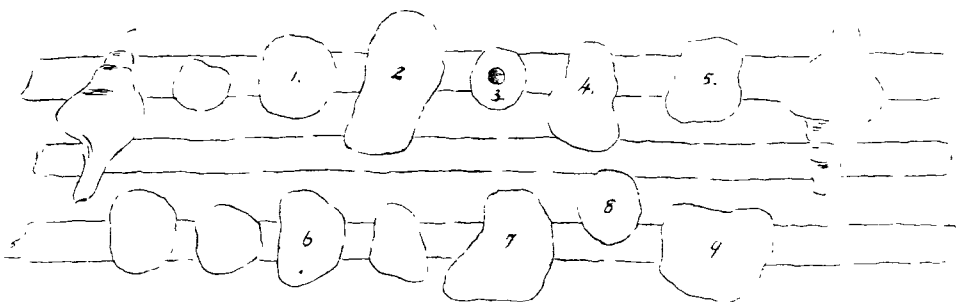


FIG. 3.

One or two further details are to be noted. The tree-trunks that surrounded the little clearing were blackened with charcoal and scarred with the frequent blows of the rain-makers' axes: the ground was more or less littered with sheets of bark and the remains of split coconuts, while several bamboo water-containers stood propped against the trees. Beside these latter there was an old broken-necked beer-bottle which had come from Buji on the Mai Kussa, when some twenty-five years ago a police camp had first been established there. This last was filled with dirty water and corked with a roll of bark.

The Laboratory of Bute.

The third *na-poki-nabu*, viz. that of the old man Bute, is to be found near the village of Mata, a day's journey to the west of Bebedeben. It is situated on what is in fine weather the bank of a little stream, Para-Teven, some distance from the track, and is well enough concealed among the sparse timber and grass. Circumstances were not favourable to my first visit, for two or three most unseasonable storms in the month of July had flooded the country, and Bute's rain-trough, which should have

been dry, was now almost hidden from view under a fast stream of water. However, one could discern the outlines of a trough of the usual size and form about which there lay many ragged sheets of bark. It was impossible to discover what was in the trough, though the rain-maker's assistant, Agal, raked up from under the water quantities of blackened fibrous material, which I first took for cassowary feathers, but which proved to be the decayed remains of leaves from the sacred palm *sakr*. In response to my suggestion he explored the now turbid depths again and succeeded in bringing up a lump of granite, though whether from the trough itself or from the bed of the stream I did not think of noting. As Bute deprecated my suggestion that his art had been responsible for the inconvenience of the recent floods, it may be perhaps assumed that the stone was not found in the trough, where its presence would have argued that rain-making was still actually in progress. Only one other detail seems to be worth recording: my informants showed me numerous plants of the wild ginger (*wangap*), which grew about the site and furnished Bute with one of the indispensables of his technique. On the whole the place showed signs of neglect in strong contrast to the business-like neatness of the two above described, though no doubt Bute had some excuse, for no laboratory looks its best when buried under a foot of running water.

The Rain-Making Ritual.

The rain-maker works in private or in the sole company of his confederates. Indeed, so secret is the operation that no other native would accompany me on a visit of inspection. As for rain-making in earnest, I was not privileged to see it, and even had it been warranted by the state of the weather, I doubt if I should have had the luck of an invitation. However, each of the three practitioners explained his methods and carried them out in mock show.

The rain-maker binds some coloured crotons on his brow and sticks branches of them in his belt, so that he looks singularly garish amid the gloom of his narrow clearing. He has previously smeared the adjacent tree-trunks with black, and has brought a coconut and laid it on the ground beside the trough at which he means to work. (Yawes had two coconuts to which he gave the names "*Suak*" and "*Azekwal*," though he gave me no clue as to their meaning. They are words that I have not met with in any other connection.) Now he retires to the further end of the clearing, turns about and dances toward the trough. He carries an axe at the slope over his shoulder and moves from this side to that with modest little steps; he nods his head so that his croton leaves wave fantastically: and he very nearly turns the scale from the grotesque to the absurd by whistling. His whistling does not cease until his dance has brought him to the coconut, which he suddenly splits with one blow of the axe, crying, "*Bangi kuremi!*" ("*Bangi*, give us (rain)!"). Then he raises the split coconut to his lips, takes some of the liquid before it has drained away, and spouts it out, calling again on *Bangi*, or *Sikara Wambuwambu*, or some other sky-being. The

nature of this apostrophe varies with each rain-maker. Yawes simply cried, "*Bangi kwema!*" and "*Suak* (?) *kwema!*" as he split his two coconuts (though he might have had other formulæ which he did not care to make known to me). Wengu called on *Sikara Wambuwambu*, saying, "As I put these things in readiness on the ground, so do you make them ready above: as I break the coconut so do you" (set free the liquid ?). Bute, who chewed wild ginger and spat it out in the face of the heavens, cried: "*Nu-ya kanavomda-ya, evwoho yenamor-a!*" ("Rain descend, the sun is hot, or dry!") (the *ya* and the *a* being meaningless syllables prolonged to a very vociferous close). Another rain-maker would address *Movr*: "*Movr temerita!*" i.e. "Bathe, or splash in the water!"; and another would call on *Demban* asking whether he had pity on the people or not, and adding, "*Yer kana puthup!*" ("*Demban*, pour out your piss!").

These utterances, in so far as some of them are prayers, being addressed to supernatural powers in the sky, will be seen to hold some significance when we come presently to consider Kuramangu mythology. The rain-maker meanwhile stamps with his feet on the ground, utters booming noises behind his closed lips, and strikes resounding blows on the tree-trunks with his axe. Yawes, among whose stones was one bearing a series of parallel grooves which I have previously mentioned (No. 5, p. 384) as scored out by *Gainjan's* sago-scraper, now takes a mock sago-scraper (*kodago*) which he has already prepared, and squatting beside this stone vigorously simulates the actions of the sago-maker, first scraping at it with the *kodago*, then trampling the imaginary pith in a bag, which he plies with imaginary water.

Beyond this I did not witness any further stage in the rain-maker's ritual, for the good reason that the practitioners would go no further lest they should actually make the rain which we all wished well away. But the subsequent procedure consists merely in (i) placing in the hitherto empty trough the various articles such as crocodiles' jaws, pandanus seeds, "elk-horns," and so on, which I have already enumerated: (ii) transferring the stones and shells from the rack to the trough; (iii) pouring in water from the bamboo containers; and (iv) covering all with sheets of bark. The rain-maker's work is now over and the rain must eventually come.

In connection with Bute's *nu-poki-wabu* at Mata we find one or two details that seem to belong to the Semariji people of the trans-Morehead rather than to the Kuramangu. I refer to the use of black palm (*sakr*) leaves, and to another most interesting feature, viz. the killing of a small wallaby, which is put into the trough together with these leaves of the black palm. Mata lies toward the western boundary of the Kuramangu country proper and is adjacent to the Semariji, and we shall find that these elements in the rain-making ritual have their easiest explanation by reference to a Semariji legend.

I do not know that the rain-maker ever contracts to effect results within a stipulated time, so that there is no reason to suppose he ever fails or ever will fail. If, however, the weather itself or the powers that control it seem unduly obstinate, he

concludes that some other weather-magician is countering him by making the sun shine, and, as one rain-maker rather naïvely confessed, he would then send a message to this other requesting him to desist. We can only guess what would be the outcome, but we may be certain that it will in no wise shake the reputation of either party. Altogether it is the most difficult thing in the world to get a magician to envisage a situation in which magic should fail completely; and here, obviously, failure is out of the question, provided we are ready to wait long enough for success.

When, therefore, his object has been fully achieved, the rain-maker removes the covering of bark sheets and replaces the stones and shells on their rack. Fine weather should now set in. What in strictness should be done with the water and decayed rubbish in the trough I did not ascertain, though it is evident that they are commonly left there. But it was Wengu's practice to drain off some of the water into the old beer-bottle mentioned above and keep it against future use. I think it probable, though I am not certain of the point, that this represents a more general practice, and that the bamboos with the water from the trough were in turn used in the opposite process of sun-magic, being then exposed to the air and light under a dry verandah, painted with red clay, and decorated with feathers of the white cockatoo: though it is apparent that not all the containers used by the sun-makers were filled in this manner.

II.

Methods of Explanation.

Though many details contained in the foregoing description must still evade explanation, the main gist of the thing will be obvious enough. Rain-making as we have seen it appears explicable along two lines, not alternative or divergent, but rather parallel: partly it is mere sympathetic magic, and partly it involves an appeal to supernatural powers, following a routine which these powers purport to have laid down and which is embodied in the tribal myths. Many of those elements in the procedure which have so far defied explanation would no doubt find their place in one or other of the above-mentioned lines if only our knowledge extended far enough. Various of the objects in the troughs, for instance, such as the green turtle shell, the *mwil* or pandanus seed, the branches of *jumb* and *murus*, might be common elements in the magical routine, symbolizing some meteorological element—clouds or whatever else—in the wished-for result. But if these really are symbols they have become conventionalized, and the rain-maker who uses them is innocent of any relevant association of ideas; nor is there any point of resemblance sufficiently striking to suggest a symbolism to an outside observer. All we can suggest is that the old symbolism, if it ever existed, has been lost, so that the objects are now used simply as a matter of routine—unless indeed the imagination of a rain-maker invests them with a new symbolism, or perhaps resurrects the old.

So again there are other details whose meaning would probably become clear if I possessed a wider knowledge of the tribal mythology. The names *Suak* and *Azekwal* for the two coconuts used by Yawes, and the name *Semai* for his fusus shell, no doubt figure in the myths; but unfortunately Yawes was unable or unwilling to give any particulars regarding them, and I could not find them among the innumerable names recorded in my notes.

Yet other details seem almost too trivial to pause over, but we might ask why the operator decorates himself with croton leaves, why he performs his somewhat foolish-looking dance, why he whistles. All he can tell you himself is that this behaviour was enjoined by *Gainjan*, and unless it be that he is whistling for the wind (a practice common enough in Papua, though I never noted it on the Morehead) these points seem devoid of any significance. It is possibly safe to say that they are merely artistic effects for which it is unnecessary to postulate any magical or religious purport.

RAIN-MAKING AS MAGIC.

The rite of rain-making may be first considered in its main outlines as one of magic. The rain-maker desires to see, not fresh sunny days and star-spangled nights, but a sky veiled with dark clouds, from which there issue the rumbling or the crash of thunder and eventually the rain. He cannot actually hide sun, moon and stars with a blanket of clouds, so he takes instead their symbols, the stones, from their comparatively airy place, and hides them with a blanket of sodden bark. He cannot create the peal of thunder, but he would hear it in imagination: so he reproduces it as best he can by stamping on the ground, belabouring the tree-trunks, and making a necessarily distant thunder in the hollow of his mouth. He would have darkness, and blackens the tree-trunks so that they be in keeping with his idea. He would see the falling rain, so he liberates the liquid pent up in the coconut, or pours the water out of his bamboo vessels, or spouts it out of his mouth.

One or two of the ingredients of the mixture in the trough are not without their magical explanation, far-fetched as it may appear. While most, as we have seen, conveyed no hint of symbolism to the rain-maker, the leaves of the elk-horn and the rags of blackened fish-net were voluntarily compared by Wengu to the clouds; and at Bute's laboratory, where the whole procedure was somewhat different, a stone, fished up from the depths of the creek, was said to be put in the trough to make the sky "heavy."

These, however, are unimportant details. The gist of the ceremony is in make-believe to cover the heavenly bodies with clouds and to produce the thunder and the falling rain. When rain is no longer needed the stones are uncovered and restored to their comparatively dry place, in order presumably that sun, moon, and stars may

shine again in a clear sky. The whole will well enough bear interpretation as the symbolic representation of a wished-for result.[1]

It should be noted that there are some factors in the ritual which, while apparently possessing no symbolic value, may yet be essential to its success. I refer to four kinds of material objects, and suggest that they are regarded as potent *per se*, as possessed of a *mana* that somehow helps but baffles explanation, as energizing substances, or as what I have elsewhere called magical catalytics.

The first of these four is the fragment of crocodile skull. Why should it be found in the trough? One can only refer to the facts that this abominable creature abounds in the waters of the Morehead, where it is a genuine terror to the natives: and that it is frequently associated in tribal belief with the magician-doctor and the sorcerer. The crocodile tooth indeed is the main instrument of the doctor or *moin-devenar*. He appears to suck it out of the head of his patient and finds in its hollow the cause of disease, or he casts it away and, following it up, finds in its hollow again the patient's truant spirit. The sorcerer too is reputed to have dealings with the crocodile of so intimate a character as to be able to enter its body and so secure his victim in the water. I never heard any plausible reason why the crocodile should have any influence over the rain, and can only suggest that the bones of his skull may be regarded as possessing some energizing power of their own.

The same idea probably holds with regard to *wangap*, the wild ginger. Ginger is widely used throughout the Territory by magicians, just as are other hot and highly flavoured plants, whether or no they have any really stimulant properties. It is used especially to spit upon objects or individuals, apparently with the idea of infusing some influence or power into them. So in the Morehead District the sorcerer will chew ginger and spit on a wooden snake when he intends his victim to be bitten by a real snake: and the hunter will spit ginger on his arms, or rub it over his dog's nose before the hunt. So again Bute the rain-maker chews the root and spits up at the sky as he cries out for the rain. Perhaps we may assume that the strange hotness of the plant is sufficient basis for the idea that it possesses intrinsic magical value, and that this intrinsic power is the sole reason for its presence among the materials of the rain-maker.

[1] See the author's *Orokaiva Magic*, Clarendon Press, 1928. My attention has been drawn to the fact that the language of psycho-analysis can be used in describing these magical processes, and perhaps in *Orokaiva Magic* I should have acknowledged certain obligations to the Theory of the Unconscious, though indeed I was hardly aware of them. It is evident here that rain-making, or the ritual part of it at any rate, is in essence a wish-fulfilment. However, it must be observed that the magician's desire itself is a thoroughly overt, conscious one: he wants rain for the sake of the yams: and the wish-fulfilment is not going to be a wholly satisfactory one until the ritual is followed by concrete success, viz., by a precipitation. And we have to explain how the magician believes that his methods will actually bring about the desired result. I do not know that the Theory of the Unconscious can answer this difficult question.

Another object which may perhaps be explained on similar lines is the large cockle shell (*eta*) which is found strewn about the *nu-poki-wabu* in considerable numbers. To the *eta* (as well as to the spiral shell (*jemberi*), which was also present, though with a more specific use) there very evidently belongs some semi-sacred character which I confess myself unable to elucidate. The *nu-poki-wabu* was reminiscent of certain shell-strewn places in the Torres Straits Islands, so numerous were these *eta*, and perhaps their sacred properties (assuming they possess them) are ultimately to be explained by reference to that region. But the shrine at Kuramangu proper (the reputed place of origin of all the Kuramangu tribes) gives us a reference nearer home. Here there is quite a miniature kitchen-midden, in which *eta* occupy a conspicuous place, for every year or so an offering is taken to *Goingau* which includes several of these shells. Why they should be piled up on this site I could not discover, but their mere association with the shrine Kuramangu argues a certain degree of sacredness, and we may perhaps assume something of the same attaches to them when gathered together at the *nu-poki-wabu*.

Lastly, there are the stones themselves. These figure very definitely as symbols, but it is not improbable that they possess an additional intrinsic value. The alluvial plains of the Morehead District are almost utterly stoneless. One finds only the rarest small outcrops of ironstone conglomerate, which is friable and useless and offers no comparison to the kind of stones seen at the *nu-poki-wabu*. Indeed, all stone implements and stones have been imported. It is not inconceivable, then, that these stones should be credited with some transcendental power of their own, due to their rarity, their value, and their indestructibility. I cannot quote any definite native testimony to this effect, but it is certainly a fact that these particular stones, besides serving as symbols, possess a highly sacred character, and with this we may assume there goes the idea of power.

Rain-Making in Relation to Myth.

The Kuramangu Gods.

There is still much in the rain-maker's methods that the magical explanation cannot cover. This is especially, though not wholly, the case with the oral part of the ritual. Some of the spoken words (which I do not profess to have recorded in their entirety) seem to be no more than elementary spells, in which the speaker merely formulates his wish in words (as "Rain, descend, the sun is hot and dry!"); but many of them make an unmistakable appeal to some supernatural power or other, and these we may accordingly refer to as prayers. The names used in these prayers—*Bangi, Sikara Wambuwambu, Movr, Demban*—are those of personal beings who once lived on the earth but now have their abode in the sky. They are regarded with the greatest awe; the natives feel they are at their mercy and go in fear of offending them; they please them by a close regard for the ritual they have ordained;

and on certain occasions, as we see, they appeal to them by prayer. These supernatural personalities may be safely enough referred to as gods.

When, however, we come to examine the identity of these gods more closely we find a state of no small confusion: in fact, one might at the risk of irreverence describe the Kuramangu pantheon as a most unholy jumble. The difficulty is to discover which gods possess an individuality of their own and which are to be identified with the one "High God" who in common parlance is known as *Gainjan*, or "The Great." By "common parlance," I mean the speech of the village in which the women-folk join. They, the women, use this name, which is not in itself sacred but only a safe euphemism for the real, personal name of the High God which is to them unutterable and in fact unknown. They recognize the existence of a powerful sky-being, and they may use the name of *Gainjan* as a threat to their naughty children, but they know nothing of his divine story, nor do they know the sacred names (whether his or his associates', in the pantheon) like *Kambel, Bangi, Demban, Sikara Wambuwambu.*

To the Keraki tribe who profess to have the closest connection with Kuramangu myth in its origins, the name of names is *Kambel*, a word used only by initiated males and only in a breathless whisper. Other tribes use different names, and it is a question whether they stand for the same individual or for separate personalities. But as the main outlines of the myth remain more or less unchanged, we may best speak of one High God who goes by various sacred names; and we may continue to refer to him by the every-day euphemism, *Gainjan.*

Divine Nature of the Celestial Bodies.

It is only necessary here to give a few extracts from a mythology which is quite distractingly involved. *Gainjan* was originally a man—the first man. He somehow found himself standing in the beginning before a tall black palm of the kind called *sakr.* Hearing a murmur of voices within the trunk, he felled the tree with his axe and proceeded to cut out or cut off sections from top to bottom as it lay on the ground. At each section he liberated a new tribe of people who spoke a distinctive dialect. Those from the uppermost part of the trunk were those who now live furthest from the site of the true Kuramangu (*i.e.* the shrine which is to be found in the Keraki country), and at each lower stage he, so to speak, got nearer home until at the butt he set free the Keraki tribe themselves. Towards evening, as all these tribes, as yet undispersed, were sitting about and conversing, they suddenly noted a mysterious white object appear from amid the branches of the prostrate palm and fly upwards into the sky. *Gainjan*, who was sitting with the others, made an ineffectual effort to seize it, and witnessed its escape with an exclamation of disappointment: "Alas, my son *Bangi*!" The object was but dimly seen. Some informants merely called it a shining white "something"; others more specifically said it was "a man with

a white skin." In some versions *Gainjan* calls it *Bangi*; in others *Wamburamba*; in others *Sikara Wamburamba*. By one or other of these names, however, the escapee travelled heavenward, bearing a lighted torch in his hand, and on his head the moon. Some informants stated frankly that the shining object that stirred among the fronds of the *sakr* palm was the moon, nothing more nor less; and as the esoteric name of the moon is *Bangi*, this might by a small stretch of language be called the fact of the matter.

In other places *Bangi*, the moon, is referred to as the child of *Gainjan* by his wife *Eram*, the sun. Much more frequently, however, *Bangi* is called the husband of *Eram*, though not in the same connection, and without any necessary implication of an incestuous relation.[1] (Such inconsistencies are all too common in Kuramangu myth.) Sometimes, indeed, it seems difficult to separate the identities of *Gainjan* and *Bangi*: at any rate, it is said that when *Eram* went away to the west *Gainjan* ascended into the sky and followed her—which seems very like the behaviour of the moon.

Out of all this we may extract the fact that the moon (in common language *harari*, in sacred language *Bangi*) is of great importance in Kuramangu religion, having a close connection with the High God *Gainjan*. Either it is in some transcendental sense his son, as when he so addressed the shining object that rose from the *sakr* palm: or else it is the truly begotten son of *Gainjan* by the sun-woman *Eram*: or perhaps in some loose manner it is to be identified with *Gainjan* himself.

To the sun (in common language *erwaha*, in sacred language *Eram*) there seems to belong no corresponding legend of origin. Although it bears an almost equally close relation to the High God, being always represented in the secrets of the myths as his wife, it nevertheless occupies a position entirely secondary to that of the moon. As for the stars, despite the fact that certain of them, individually or in constellations, bear personal and secret names, I have not discovered any important myth, and they seem to rank lower than the sun in a religious estimation.

But on the whole there is no question but that the moon, the sun and the major stars of constellations possess something of a divine nature. It will now be understandable that the rain-maker should address a prayer to the moon, the most important of the heavenly bodies, and it will be seen that the ceremony of rain-making, in dealing with the symbols of them, takes on a definitely religious character.

The Sago Myths.

There is, however, a characteristic lack of unanimity concerning the origin of the heavenly bodies. Another tale, or another version of the same tale, says that *Gainjan*,

[1] There is a tale of Œdipean incest between *Gainjan's* (*Kumbel's*) wife and son, though they both seem to be earthly people, and *Gufa*, the son and culprit, does not seem to be connected in any way with the moon.

having felled his *sakr* palm and liberated the people from it, proceeded to manufacture from the sago-like pith inside its trunk the sun, the moon, and all the lesser luminaries. First he made the moon, and, placing it in the sky (which then hung low overhead), gave it the name of *Bangi*: next the sun, which he called *Eram*, saying, "You are the wife of *Bangi*"; and, last, the various stars. All of these celestial bodies he furnished with torches so that they should lighten the sky, and it is to this myth that Yawes and his son referred in explanation of the series of bark torches ranged about the rain-making laboratory (*see* p. 385); they represented the torches which *Gainjan* gave to the moon, the sun, and certain of the stars which were in turn represented by the rain-making stones.

The pith from which the moon, etc., were manufactured is compared by the story-teller to sago, *i.e.* to the pith of the sago-palm, which it resembles well enough. But the connection with sago comes out clearly in another myth which deals with the origin of the clouds. Among all the myths of the Kuramangu none will seem more curiously dream-like than that in which *Gainjan* first obtained fire and raised the clouds. He had sent a lizard to the island of Boigu to secure the fire which was to be found there. The clouds in those times rested on the surface of the earth, and thereby obscured the passage of *Gainjan's* messenger, so that he lost his way and returned empty-handed. When a second and smaller lizard returned successful, the fire tucked under his arm, *Gainjan* immediately roasted some sago, in the common stick form, and raising it aloft dashed it in pieces on the ground. The dry sago broke and scattered like dust, and therewith all the clouds rose from the earth's surface into the sky.

A simpler version has it that the clouds were made directly from dry sago which rested in a thick layer on the earth until *Gainjan* with his broom swept it up into the air. This mythical connection between cloud and sago, or the dry dust of sago, is reflected in the secret name for cloud, *javara-arigani*, which means literally "cloud-sago."

The function of the grooved stone (No. 5, p. 384), and the use of the mock sago-scraper in Yawes' ritual, have now become clearer. They may be regarded as a reminiscence of one or other of the above tales, either of that in which *Gainjan* created the sun, moon, and stars from the sago-like pith of the *sakr* palm, or of that in which the clouds are shown to be more or less one with the sago-dust.

The Myth of the Sky-Creatures.

In the Kuramangu heavens we find not only a number of gods after the human pattern but also something of a divine menagerie. On earth *Gainjan* had his dogs, his cassowary and his pig, and was indeed surrounded by all the Morehead fauna. Some, if not all, of the original representatives of the various species are now thought of as living in the sky. *Semanukwi*, the pig, is pictured thus, and his grunting,

rooting, and tearing of coconut husks are said to be the cause of thunder. I cannot find any allusion to this belief regarding the pig in the rain-maker's ritual, but there is in one of the prayers an indirect reference to the cassowary. Ordinarily it is said that the rain is caused by the bathing of the cassowary in the sky, by its floundering and splashing in the water. Here once more we find confusion among our informants. Some say that it is *Gainjan's* cassowary, others that it is *Gainjan* "as" the cassowary: but the prayer "*Movr temerita!*" is evidently an indirect allusion to this belief in one form or the other, "*Movr*" being one of the secret names of the god, and "*temerita*" meaning bathe or splash in the water.

A similar idea appears in a myth which apparently belongs to their western neighbours, the Semariji, rather than to the Kuramangu, though the latter have in some part adopted it. This myth may be called in to explain part of the ritual of Bute, the Mata rain-maker, Mata being the nearest village to the Semariji people and thus more under their influence. *Gainjan* is here represented as scooping out the pith of the felled *sakr* (palm) and creating with it the various tribes and peoples, while the leaves of the palm turned into snakes, birds, fishes, wallabies, etc. Now the hollowed trunk, which is compared to a canoe, is elevated by *Gainjan* into the sky. It contains in especial a bush wallaby, a large snake, and a fish (their names are given, but are irrelevant to the ritual of rain); and it is the splashing of these creatures in the canoe—presumably filled with water—that causes the rain. It may seem a far cry from this myth to the slaughter of a little wallaby and its immersion in the rain-maker's trough, yet I am indebted to my informants for the association, which they pointed out quite spontaneously for my enlightenment, the little wallaby in the trough suffices to symbolize the various creatures which cause the rain by splashing in the heavenly "canoe," although without the authority of any informant, one might venture a further suggestion. Maybe the leaves of the *sakr* palm found in such quantity in Bute's *nu-poki-waba* symbolized the other creatures that were created from the leaves of the original palm of the myth.

Conclusion.

The foregoing paper has been unavoidably discursive. One need offer no sort of apology for making the actual description of rain-making as full as possible; but in regard to the explanatory part of the paper it will be seen that, while the magical interpretation is merely plain sailing, the mythological involves selecting from a very tangled mass of belief where many irrelevancies will adhere to whatever we select. Moreover it may seem that in this matter the writer has gone to some length to explain points that are of only minute importance. Yet I have little doubt that a further acquaintance with Kuramangu mythology would help elucidate still further points, and at any rate it is worth something to show again that myth may have a bearing on, or find its reflection in, the present-day life of those who believe it.



FIG. 1.—YAWES IN HIS RAIN-MAKING LABORATORY, SHOWING STONES, TORCHES, TROUGH, MOCK SAGO-SCRAPER, ETC.



FIG. 2.—STONES, ETC., IN YAWES' LABORATORY, SHOWING THE GROOVED STONE "BANGI."

RAIN-MAKING ON THE RIVER MOREHEAD.



WENGU'S RAIN-MAKING LABORATORY, WITH YEREMB, WENGU AND SARAU (INTERPRETER).

RAIN-MAKING ON THE RIVER MOREHEAD.

It will be noted that both the magical and the mythological explanations hold throughout. The magical rites are not displaced but only helped by the appeal to the mythical gods and the repetition of their mythical actions. Or we may say, vice versa, that the religious rite, consisting in an appeal to the mythical gods and in the enaction of certain mythically ordained processes, is helped out by methods purely magical. It is safe, I believe, to say that the Kuramangu are a religious people—more so than any I have worked with in Papua hitherto—and that they take their mythology, the intellectual embodiment of their religion, for the most part with real seriousness. But they are of course far from being done with crude self-sufficient magic: and the two, so far from being mutually antagonistic attitudes, are found here concurrently and, so to speak, in co-operation.

Lastly, although this paper has provided a little more evidence to show that myth is a living reality which may be seen actively at work in present-day life, the writer does not for a moment believe that such evidence alone does much toward solving the time-honoured problem. It is very certain that myth must have some functional value, or it would never survive; but to claim that an understanding of this value provides an answer to this question over which so many anthropological corpses have fallen is surely to be dodging the issue. The question in which the world is still interested is not the function of myth but the origin and form of it. Can anything in their present-day function help us understand what gave rise to those curious episodes in Kuramangu mythology of which I have given a few samples in this paper? It is obvious that mythology helps to explain rain-making; but does rain-making help to explain mythology?

NOTES ON TOTEMISM IN EASTERN AUSTRALIA.

By A. R. Radcliffe-Brown.

The word "totemism" has been a useful one in the past, but it may well be asked if it has not outlived its usefulness. Such a term is useful when it enables us to bring together and compare phenomena of one general type, occurring in different forms or varieties in different regions: it is the opposite of useful, however, when it isolates these phenomena from other related phenomena, and so prevents us from considering them together. The problem of totemism is part of the wider problem of the relation of man and nature in ritual and myth, and must always be studied in reference to the larger problem. There has been a tendency to forget this. Thus, in reference to the culture of the Australian aborigines, the relation between man and nature in ritual and myth affords a most important and interesting problem which, I am convinced, must be approached as one problem, complex though it may be, if we are to reach any understanding of it. In the past certain special aspects of that relation have been isolated under the name of totemism, and then have been discussed without sufficient consideration of the context in which they exist.

In what is called the totemism of the Aranda and other tribes of Central Australia, one of the most important features is the existence of localized rites for the increase of natural species. During my work in Western Australia in 1910–12, I discovered similar rites over a considerable area from the Western Kimberley district in the north to the Murchison River in the south. The question of the distribution of rites of this type thus became an interesting one. The work of Spencer and Gillen suggested that this distribution extended as far north as the Gulf of Carpentaria. Siebert recorded rites of this type from the Dieri tribe. The Australian National Research Council, by means of funds provided by the Rockefeller Foundation, has now undertaken, amongst other anthropological investigations, a systematic study of the social organization of Australian tribes, and our knowledge of Australian totemism and related phenomena is being greatly extended. Miss Ursula McConnel, in her investigations in 1927–8 in the Cape York Peninsula, discovered in the Wikmunkan and other tribes of the Archer River localized ceremonies for the increase of natural species similar in essentials to those of Western Australia. Some account of these will be published shortly. Recently (January, 1929) a grant from the Australian National Research Council enabled me to spend three weeks in travelling through the northern part of New South Wales, and there I was able to obtain a little information about rites of the same kind. It has thus been possible to demonstrate the very widespread distribution of this particular

cult, showing all the same essential features, in the extreme west and in the extreme east of the continent.

It may be well to give a few particulars about the tribes which are referred to in this note[1]:—

Yukumbil.—This is a large tribe, named from its negative (*yukum* = No), occupying the region of the Richmond and Clarence Rivers in the north of New South Wales and extending over the Queensland border. Their country extends about 100 miles north and south and about 80 miles east and west. Within the tribe there are considerable local differences of dialect, and a number of sub-tribes are recognized. The sub-tribe about which I have most information is the Kidjabal of the country at the head of the Clarence River. The tribe has a system of four sections with the names Barang, Deroain, Banda and Bandjura.

Yegera and *Yuungai.*—These are two small tribes that formerly occupied the lower part of the Clarence River. I am told that the languages were similar. The Yuungai is now entirely extinct. There are still surviving two persons (Jack Freeburn and his sister Rosie) who speak Yegera. Enquiries failed to discover any section system in this tribe.

Kumbaingeri.—This tribe extends along the coast from a little south of the Clarence River to the Bellingen River.

Ngambar.—A tribe, now nearly extinct, which occupied the Nambucca River.

Ngaku.—A tribe, also nearly extinct, to the south of the last-named, on the lower Macleay River.

Dangati.—The tribe occupying the middle portion of the Macleay River.

Burgadi.—A tribe occupying the upper portion of the Macleay River and extending apparently to Armidale and Ben Lomond.

Birpai.—The tribe on the Hastings River.

The Kumbaingeri, Ngambar, Ngaku, and Dangati had a system of four sections with the names Karbung (fem. Guran), Wambung (fem. Wirgan), Marung (fem. Karagan), and Wirung (fem. Wangan).

In all these tribes, as normally throughout Australia, the most important social group is the local group which I prefer to call a horde—this is a small group which owns and occupies a certain defined territory. Throughout Australia the horde

[1] The White settlement of this country began before 1850, and the normal tribal life had come to an end fifty years ago with the expropriation of the native lands. The scanty remnant of the original virile population is now gathered into reserves and camps, where nothing of the original native life remains. In most of the camps the children and younger men and women, of whom a majority have some proportion of White blood, do not know the native language. Information about former customs can therefore only be obtained from a very few old people of sixty or seventy, who remember what they were taught when they were young: there are very few of these left. Although in this paper the present tense is used, it should be noted that all the customs described are now things of the past.

is normally a patrilineal closed group. In many tribes, including those referred to in this note, the horde is exogamous. The horde is therefore here a small exogamous patrilineal local clan.

Throughout the Yukumbil country there are sacred spots at which rites for the increase of natural species were formerly carried out. Such places are called *djurbil*. Each horde normally has a number of *djurbil* in its country (*tjagun*). As an example, we may take the horde which formerly owned a territory of somewhat less than 100 square miles between Woodenbong (native *Bodjumbuñ*) and Unumgare (native *Andamgu*). In the country of this horde there are the following *djurbil* :—

Kuruman	= kangaroo	at *Bainmabal*.
djubera	= wattle-grub	at *Djubera*, near Unumgare.
bandjur	= native bear	on range between Woodenbong and Unumgare.
yirig	= locust	
gamul	= big lizard	—
kweañ	= opossum	at *Dibamgani*.
kabai	= sugar-bag (wild honey) . .	—
guuram	= sleep	near Mt. Lindesay.
warzam or *banyara*	= rain-serpent . .	—

The origin of these *djurbil* is explained by stories relating to a mythical period before man appeared. In Yukumbil, this period is called *Budjeram* or *Buzeram*, and the mythical beings who lived at that time, and some of whom are believed still to live in the mountains and scrubs, are called by the same name. Each *tjagun* (territory of a horde) has its own *budjeram*, and these are friendly to the people of the horde, that is, all the persons born in the horde and all the women introduced from other places as wives of men of the horde. To strangers, *i.e.* persons from other hordes, the *budjeram* of a country are dangerous. A *djurbil* which is connected with the *budjeram*, is therefore a dangerous spot for all except members of the horde to which it belongs. There are apparently instances of a *djurbil* being shared by two adjoining hordes.

Members of the horde to which a *djurbil* belongs have the power to provide for the increase of the natural species associated with it, by going to the *djurbil* and performing a simple rite. To illustrate those rites, it will be best to take a few examples, and I will therefore give the legends and the rites for some of the *djurbil* of the Woodenbong horde. The first legend relates to two *djurbil*, that for kangaroo and that for the edible grub *djubera* :—

In the *budjeram* there was an old woman (*miraŋan*) and her nephew (*ñuguñ*, woman's brother's son) who was a good-looking man (*balugañ*).[1] They were living

[1] In these tribes the mythical beings do not seem to have had names ; they are distinguished as being of several kinds. They are of both sexes, and amongst the males some are described as *ŋimbun*, which was translated to me as meaning "a little old man," while others are *balugañ*, explained as meaning "a good-looking man."

together at the place now known as The Glen. The nephew had a big kangaroo-net (*murdoj*), and one day he put up his net. He told the old woman to go and beat up the kangaroo by shouting, and so to drive them into the net while he stood by to kill them when they were entangled in the net. She refused to go, and said that she would stand by the net. So the nephew had to go to drive up the kangaroo, while the old woman stood by the net with a boomerang (*baragaŋ*). When the nephew had gone to drive the kangaroo, one very big old-man kangaroo got up and went towards the net and got entangled in it. The old woman tried to kill him, but she was not strong enough, and as the kangaroo struggled she also got entangled in the net. Then the kangaroo carried away the net with the old woman in it. As he travelled he soon got tired, and every now and then he had to rest. At each spot where he rested a swamp was formed, and the swamps are there to this day. Finally he stopped altogether at *Bainmabal*, where the water-hole now is. The kangaroo, the net, and the old woman are in the water. The nephew returned to where he had placed the net, and found the net and the old woman gone. He saw the tracks of the big kangaroo. He followed the tracks. When he came to the water-hole at *Bainmabal* he spoke to his aunt. She told him that she was finished, and that he should leave her. He returned to The Glen. Then he started collecting and eating wattle-grubs (*djubera*). As he moved about the country, wherever he camped a swamp was formed, and these swamps still exist. He reached the spot called *Djubera* and camped there. He ate too many grubs. His head ached. He rolled about on the ground, and as he did so a water-hole formed, and in that he remained. He is still there.

At *Bainmabal*, which is a water-hole within the township of Woodenbong, rites for the multiplication of kangaroos can be performed. One or more of the performers dives into the pool and as I understand my informants, stirs up the water. It is said that he could see the kangaroo and the old woman. During the rite the performer talks to the water, saying that he wants the kangaroos to be plentiful, and possibly mentioning places where he wishes them to appear in numbers.

The rite for the increase of the edible grub *djubera* was performed at the pool having that name. The performer dives into the pool and brings up mud from the bottom: this mud he throws against certain gum trees which stand beside the pool. One man may do this alone, or two or more may carry out the rite together. The performer talks to the water, telling it to make the grubs plentiful. The rite is performed in the winter.

The *djurbil* for *bandjur* (native bear) is on the ranges between Unumgare and Woodenbong, and consists of a hole in the rock, but without water. The story is that in the *Budjeram* the beings of that time were hunting native bears but could not find any fat ones. First, they killed an old-man bear, but as he was not fat they left him; then they killed a mother bear with a young one on her back. They left them also. The old-man bear came to life again and went up a tree; the

mother bear began to come to life again, and rolled about and turned into stone. She is there in the hole which constitutes the *djurbil*. The above is probably an incomplete version of the legend.

The rite for the increase of native bear consists of throwing small stones into the hole, talking the while and telling the hole to send out plenty of bears.

The *djurbil* for *yiriy* (locust) is near to the last-mentioned, and is also a hole or cleft in the rocks. In the *Budjeram* the people of the place used to take their children with them when they went hunting. One day an old woman (*mirugan*) told the people that they should leave all the children for her to take care of, so that they would be able to collect their food much more quickly, having no children to look after. The people were not inclined to do this, but finally the old woman was able to persuade them. All the people went off hunting, leaving their children behind with the old woman. The old woman made a deep hole or cleft in the rock and put all the children in it. There were a very great number. They are there in the rock, but they now turn into locusts. The spot is the *djurbil* for locusts.

Locusts are an article of food for the natives. To make them plentiful the performer pulls at a vine which grows up from the bottom of the *djurbil* place, talking as he does so and telling the locusts to be plentiful. It is said that by a visit to the *djurbil* and talking to it the people to whom it belonged could enlist the aid of locusts. If they wanted to steal a woman or kill a man of another horde, they could arrange with the locusts to make so much noise that any cry for help from the victim would not be heard.

There is a legend which explains the origin of the *djurbil* for a large species of lizard, probably Varanus, called *yamal*, or *djiruy* :—

In the *Budjeram* there was once a *balugan* (good-looking man) with his uncle (*kaway*) who was a *nyimbun* (little old man). They hunted the goana (*yamal*). The old man (*kidjum*) sent the young man out to hunt for goana. In those days there was a very big goana which came from the Logan River and was travelling through the country. The old man knew about this big goana. The young man killed small lizards, but his uncle told him that they were no good and he must kill the big one. They followed up the tracks of the big lizard. Finally they came near to where the big goana had stopped to camp up a tree in the mountain. All the birds of the country had come round the lizard and were fluttering about. The old man saw the birds and knew the lizard was there. He told his nephew to go over and kill the lizard. The young man went off and found a small lizard and killed that. When he returned with it, his uncle was very angry and sent him again to kill the big one. The young man went, but he saw that the lizard was too big for him to kill. He returned to his uncle and said, "That big lizard is too big. It is no good to try to kill him. It is better to leave him alone." Then the old man went himself. When he approached the lizard it made ready to swallow him.

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The old man returned to camp and, as he was angry, he started fighting with his nephew. The nephew had the best of the fight.

At the spot where the lizard stopped there is a large rock which represents the lizard itself: this is the *djurbil*. To increase lizards of the species, the men of the horde used to go and knock off with a stone tomahawk little pieces of stone described to me as being like knobs on the rock. They would talk to the rock, telling the lizards to be plentiful.

The *djurbil* for opossum is a water-hole called *Dibamgani* but often referred to as *Kweañ* (opossum). According to the statements of the natives there is a stone "door" to this water-hole, and by opening this for a time and talking to the water an increase of opossums can be produced. This rite, like nearly all those for the increase of species of food, was always performed in the winter.

The *djurbil* for *kabai* (honey of the native bee) is a pool in the neighbourhood of Unumgare, near which stand two ironbark trees, while in the same spot there is a yellow stone or rock. The man who wishes to increase honey takes mud from the pool and throws it at the ironbark trees, and also breaks off small pieces from the yellow rock, leaving them lying there. He talks all the time he does this, telling the bees to go everywhere and build their combs in the trees, and stumps, and logs.

The *djurbil* for *yuram* or *yuuran* (sleep) is of a somewhat different kind from those described above. The men of the group can go to this spot, and by performing the rite can send a sort of sleeping-sickness to their enemies in any part of the country. The legend is as follows:—

In the *Budjeram* there was a *balugañ* who was looking for *walumban* (a grub that lives in the pine tree—*tjunbal*). He filled his net bag (*kulei*) with the grubs. He camped at a spot near Mount Lindesay. He made a fire, and roasted the grubs, and had a meal. After he had eaten he lay down under a tree and went to sleep. He slept and slept and did not awaken. He is there sleeping still, covered with his opossum-skin cloak (*gizei*). His food, the *walumban*, is there also, turned to stone. These, I believe, are certain small stones. There are also at the *djurbil* five stones standing upright in a row, but I do not know what they represent.

If a man wishes to send his enemies to sleep he goes to the *djurbil* and with a sheet of bark hits the ground beside the five standing stones. The *budjeram* stirs in his sleep. The performer then says what he wants, naming the place to which he wants the sleeping-sickness to go. He can say that he wishes it to attack a person or persons for one or two nights, or he can send it so that his enemies simply fall asleep and do not awake any more. A short time after the rite is performed there will be a shower of rain, and this is the sign that the rite has been successful and the sleep has gone out to the enemy. It is very dangerous for a stranger to go near this *djurbil* as he is likely to be attacked by the sleeping-sickness.

I was told that the most important of all the *djurbil* of the country near Woodenbong is that on the hill called *Banyara* by the natives (Dome Mountain ?), which is connected with rain. Unfortunately my information about this is very incomplete.

In the *Budjeram* there was a snake of the kind called *banyara*. He had wings, and flew from Yulgilbar (on the Clarence River below Tabulam) and settled on the mountain called *Banyara*. Although the being is thus referred to as a snake, or as having been a snake, it is now referred to as a *warzam*. I could not discover exactly what this word means, but it seems to be the name of some sort of sacred being connected with rain. I am told that the *warzam* often makes a noise like thunder in the mountain. If any member of the Woodenbong horde is sick this noise is heard. The *warzam* is friendly to the people of the horde but dangerous to strangers.

Apparently in this region, where the rainfall is plentiful and well distributed, there was not much need for rain-making ceremonies. The people of the horde could, however, go to this *djurbil* and talk to the *warzam* and rain would come which would flood all the creeks and valleys.

I have some information about *djurbil* in other parts of the Yukumbil tribe, but no complete information about all the *djurbil* of any other horde. There is a *djurbil* for yams (*dăm*)—a very important source of food in former times—at *Djulgabil*, near Roseberry Creek. I did not hear of any other *djurbil* connected with a vegetable species, but such may well exist. Some of the more unusual *djurbil* may be mentioned.

There is a *djurbil* for hot weather (*nyayge*) in the mountains near the Richmond River. I did not hear of any *djurbil* for cold weather in Yukumbil country, but I am told that there is such a *djurbil* belonging to another tribe at Warwick, in Queensland. Cold weather is *wariy*, and the place of the *djurbil* was called *Wariy-wariy*, which the white man turned into Warwick.[1]

There is a *djurbil* for wind (*burgiñ*) at a place called *Bululguñ* near Roseberry Creek. The legend is that in the *Budjeram* a man was following a very big bandicoot which ran into a hole. The man followed the bandicoot into the hole, and travelled along underground until he came to the place where the big wind is shut up under the earth. At the *djurbil* there is a stone covering a hole; if this stone is lifted, a cyclone will come.

I was told of two or three centres at which rites for the increase of children or babies (*djadjam*) were performed. One is at the place now called Tadam—native *Djadjam*; another is on the Tooloom Range. The latter is a place where there are a number of trees (spotted gums).[2] When the people to whom this *djurbil*

[1] It may be noted that a place where there is a *djurbil* may often be referred to by the name of the species of which it is a *djurbil*. Thus the water-hole Dibamgani, which is a *djurbil* for the opossum (*kweañ*), may often be referred to simply as Kweañ.

[2] The owner of the country, at the request of the natives, has refrained from cutting down or ring-barking these sacred trees.

belongs wish to make plenty of children, one or more of them will go to the spot, strip a number of small pieces of bark from the sacred trees and throw them in different directions, talking as they do so, and naming the places where they wish the children to increase.

As the Yegera tribe is now almost extinct my information about it is very scanty. I was told, however, by Jack Freeburn, that there were places like the *djurbil* of the Yukumbil, the equivalent term in Yegera being *yerkari*. I was able to identify one spot as the place for increase rites for the black bream.

In the Kumbaingeri language the equivalent of *djurbal* is *mirer* or *mireru*, and in general the beliefs and practices connected with them are essentially similar to those of the Yukumbil. But while all my Yukumbil informants agreed that no one would perform increase rites at a *djurbil*, except the members of the horde that owned the locality, some of the Kumbaingeri thought that anyone who knew how to perform the rite could do it even though the *mirera* belonged to a horde other than his own. It is now so long since these rites have been performed, or even talked about and so long since the local organization was completely disrupted by the white occupation of the country, that it is impossible to obtain any quite certain information on a matter such as this. It is clear, however, that there is a very real sense in which each *mirera* belonged to a certain group (horde) and was, if not their exclusive possession, at any rate very definitely their property.

Amongst the *mirera* about which I was told, there were two or three for kangaroo, two for opossum, and others for emu, kangaroo rat, dingo, crab, codfish, perch, oyster, and a species of shell-fish. The only vegetable species for which I heard of an increase rite is a vine with edible fruit called *girguru*.

An interesting point with regard to the kangaroo is that in one part of the country there is a place for the increase of old-man kangaroo (*wuyu*) only, while elsewhere and belonging to a different horde there is a *mirera* consisting of two water-holes, one connected with the female kangaroo (*kandu*) and the other with the little kangaroo of either sex (*buiara*). There are therefore separate increase rites for male kangaroos and for females and young. The rite in each case is similar—hitting the water of the sacred pool and talking to it.

I heard of a *mirera* where storms could be made but did not hear of one specifically connected with rain.

Two unusual *mirera* are connected with two diseases: *gunandi* a form of diarrhœa, or perhaps colitis; and *bilir*, apparently dysentery. By performing rites at these spots, a man could send a visitation of the sickness upon an enemy. If a man were attacked with *gunandi*, he would try to think of some one of the horde to which it belonged whom he might have offended and who might therefore have sent the sickness, and he would then go and ask to be pardoned for his offence and cured of his illness. For a cure he would be taken to the *mirera*, and the man taking him would talk to the place, saying that the victim was now to get well. A little

sand from the sacred spot would be rubbed on his body. After that, the natives say, the sickness would go. At the *gunandi mirera* it is said that you can always hear a noise like a bullroarer when you go by at dusk.

The *mirera* for tiger-snake and that for the death adder seem chiefly to have been used for sending these snakes against enemies. A man could go to the tiger-snake *mirera* at *Duyoiyara*, and hitting the water there, and throwing it in a given direction, and talking to the water he could send tiger-snakes to kill his enemies in that quarter. Similarly with the *mirera* for the adder (*bagal*), which is a round water-hole on the top of a mountain with a number of stones spotted like the adder in the neighbourhood. The performer throws some of these stones into the water, and throws water in the direction in which he wishes the snakes to go and attack his enemy.

An unusual *mirera* in the Kumbaingeri country is one for ghosts (*gumbur*), near Coramba.[1] The Kumbaingeri explanation of the *mirera* is that they were formed in the mythical period, but it is impossible to obtain the legends in any fullness. Such fragments as I obtained are not of much value.

The Dangati, Ngambar, and Ngaku tribes seem to have had very much the same customs. The remnants are now living together, and I shall therefore deal with them together in this account.

I could not find any word in these languages exactly equivalent in use to *djurbil* or *mirera*. There are, however, exactly similar sacred spots, and in a number of instances the name of the place is formed by adding the suffix *-gaiai* or *-gaiai* to the name of the natural species with which it is connected, as *Gumugaiai* (*gumu*, an edible grub), *Kabaygaiai* (*kabay*, honey of the small native bee), *Yiririyaini* (*yiriri*, the white-winged bee), *Wirayaiai* (*wira*, duck). My enquiries, though perfunctory, were sufficient to demonstrate the former existence in these tribes of localized increase ceremonies of the same type as those described for the tribe further north. Thus, in the Ngaku tribe there is a spot called *Miregirmaygin*, near Crescent Head, where increase rites for the jew-fish (*miregir*) can be performed. There is a deep hole in the middle of a swamp: the performer thrusts a spear into this hole, splashes the water, and talks to the place, telling the jew-fish to be plentiful.

In these three tribes, however, I came upon a new problem. Here every individual has a special connection with some species of animal which is his *bagar* or *neyagai*. A person may kill and eat the animal so related to him, but when he dies all his nearer relatives must abstain from eating or touching that particular food for a certain period. The period of abstention is different for different species of animals. The longest is that for porcupine,[2] so that when a man whose *bagar* is

[1] The word "ghost" was used by my informant, but a better translation would perhaps be "evil spirit" or "demon."

[2] The animal called a porcupine in Australia is, of course, the Echidna.

porcupine (*nuguthn*) dies, all his nearer relatives abstain from porcupine flesh for three years.[1] The period for some foods was much shorter, even as little as three or four months.

An enquiry as to how the *bagar* was acquired elicited the statement that it was inherited from the father, but this was modified later, and I was told that a man gets the *bagar* of his father and a woman that of her mother. I was unable to verify this by genealogical records, which it was not possible to obtain. It is quite certain, I think, that a man always has the same *bagar* as his father, but I suspect that it is at any rate possible that a woman takes that of her mother's brother.

The problem that thus presents itself is whether there is any connection between the *bagar* and the increase rites. Unfortunately, as these tribes have abandoned their own culture for half a century, none except a few of the very old people know what their own *bagar* is or anything about the increase rites. I could determine the *bagar* of only six or seven individuals, and in four instances I was able to discover that the individual belonged to a horde in which there was a sacred spot for the increase of the species which was that individual's *bagar*. Thus, *Miregirmagga*, the place for the increase of jew-fish, is in the country of John Moseley's father, whose *bagar* was the jew-fish (J. Moseley is now [1929] about 75 years of age). So also *Kabaggaai*, the place for the increase of the honey of the black bee, is in the country of Billy Olton, whose *bagar* is *kabay*.

The instances are too few to enable us to draw any certain conclusion, but they do suggest the possibility that a man's *bagar* is always some species of animal which is connected with the horde to which he belongs, by reason of the existence of a place for increase rites for that species within the country of the horde. It has thus been possible to trace the former existence of localized rites for the increase of natural species through 200 miles of the coastal strip of New South Wales. It may yet be possible to follow up these enquiries for another 100 miles southward as far as Port Stephens, but from that point southwards it is now too late to obtain any information, as all memory of former native customs has entirely disappeared. There are a few indications that lead me to suspect that a similar cult may very well have extended right through the coastal region of New South Wales and possibly into Victoria. Howitt's unsatisfactory description of the totemism of the Yuin tribes[2] suggests the possibility of similar rites there.

Northwards beyond the Yukumbil, I am satisfied that similar rites existed in the Yegera tribe, but I have no information about the Djandai, formerly around Brisbane and now practically extinct. The fact that Rev. J. Mathew and others who have described the Wakka and Kabi tribes say nothing about any such rites

[1] The food which cannot be eaten because it is the *bagar* of a deceased relation is called *giray*.

[2] *Native Tribes of South-East Australia*, p. 133.

cannot be taken as evidence that they did not exist: nor may we assume that there were not similar rites amongst the Kamilarai and other tribes with matrilineal totemism in the interior of New South Wales. If, however, there is a continuous distribution of this cult from the east coast to the centre of the continent, the connection is most likely to be through Western Queensland.

The characteristics of the cult of these coastal tribes may be enumerated as follows. The sacred spots[1] at which increase rites are performed are marked by the presence of a water-hole, some peculiar feature of rock or stone, or by trees. A majority have a water-hole. Only very few have sacred trees without either a water-hole or some rock formation. Amongst the sacred stones there are some which are said by the natives to resemble in shape the species with which they are connected. Thus, at *Wandjimirera* (*wandji* = dog), near Coramba, there is a rock which is said to have the shape of a bitch. At *Wirayaiai* (*wira* = duck), near Colombatti, there are stones shaped like ducks. In a number of instances I was able to satisfy myself that the animal or other natural species is, or formerly was, actually abundant in the neighbourhood of the spot where the rite for its increase was performed. Throughout this region the performers of the increase rites do not paint themselves or put on any special decorations, nor do they dance or sing as part of the rite.[2] The performer talks all the time he is carrying out the rite, but there are no set formulas (spells of prayer) that he repeats. He just tells the animal, or whatever it may be, to become plentiful, and mentions special places where it is to become abundant. The rites themselves are very simple in form—splashing water, throwing stones or mud, knocking fragments off a rock, and so on. In describing the rites to me in Dangati two words were repeatedly used as descriptive of the rites themselves: one, *giregerin*, seems to mean to poke or to stir up: the other, *maygin*, means to catch hold of a thing, therefore to get or obtain.

Throughout this area there is apparently a legend in connection with each of the places at which increase rites can be performed, and such legends all refer to

[1] There are, of course, many other sacred spots that are not increase centres. Thus in the Dangati and neighbouring tribes there are many sacred spots, called *nambi*, which women and uninitiated boys are not allowed to approach. When a youth was being initiated he was taken to some of these spots by the medicine-men, and was often compelled to spend a night alone at some of them. Medicine-men also obtained magical power by spending a night alone at a *nambi*. A night spent at such a spot was expected to provide an "experience." Thus, one man told me how at one such spot he had lain motionless in the dark while he felt a snake crawling all over him. These "experiences" have a good deal in common with the "visions" of the American Indians. The *nambi* are centres of magical power. Other sacred spots are so, apparently, merely as being connected with the mythology. The whole subject of the relation in ritual and myth between the social groups (tribe or horde) and its territory needs investigation.

[2] In all these tribes there are songs which have magical efficacy. Jack Larrigo, Kumbaingeri, of Maclean, sang me songs, such as one for making the mullet come into shallow water, and another for making a kangaroo stop still or move slowly when being tracked by the hunter.

the mythical times at the beginning of the world and to the beings who then existed.

The question now arises whether we are to call this cult a form of totemism or not. It is, of course, largely a matter of mere words, but terminology can and does affect our thinking, assisting or obstructing it as the case may be. If we refuse to regard the Yukumbil increase rites as a form of totemism, then we must also refuse to apply that term to what I have some years ago described as totemism in the tribes of Western Australia,[1] and it will then be hardly satisfactory to continue to speak of totemism in the Aranda tribe.

Whether we call it totemism or not, the important matter is to recognize the existence in widely distant parts of Australia of a cult which, though it may vary in some respects in different regions, is in its essentials the same throughout. The essential features are: —

(1) The association of certain spots, very commonly marked by a water-hole, sometimes by some natural feature of rock or stone, occasionally by some artificial arrangement of stones, with particular natural species, that species being very frequently specially abundant in the neighbourhood of the spot associated with it.

(2) The existence of a system of rites performed at such spots for the increase of the natural species with which the spot is connected.

(3) The existence of a system of myths connecting these sacred spots with the activities of mythical beings.

Remembering the Australian system of land ownership by small hordes, we thus get as the essential of this increase cult an association of four things:—

NATURAL SPECIES

MYTHICAL BEING

LOCAL CENTRE FOR INCREASE RITES

HORDE

[1] "Three Tribes of Western Australia," *J.R.A.I.*, 1913.

There is a cult conforming to this general pattern in Western Australia (Kariera, Talaindji, etc.), in Central Australia (Aranda, Dieri, etc.), in North Australia, and on the east coast of the continent (Yukumbil, Dangati). Although the cult everywhere conforms to this general pattern there are variations in different parts. Thus there are differences in ritual idiom. The talking that is so marked a feature in New South Wales is almost absent in Western Australia and apparently in Central Australia. On the other hand, the use of blood in the increase rites is frequent in Central Australia but apparently absent in New South Wales. There are similar differences of idiom in the myths. Yet there are also striking similarities in detail over wide areas. Thus, there are increase centres for children or babies in Western Australia, in Central Australia, in North Queensland, and in New South Wales. So also there are increase centres for hot weather and cold weather in Western Australia and in New South Wales.

In Central Australia the cult is associated with, and modified by, a system of beliefs concerning reincarnation, while there is no evidence of this in Western Australia, in North Queensland, or in New South Wales.

In the past many discussions of Australian totemism have been vitiated by the fact that the only totemic system about which full information was available was that of the Aranda. It was not possible to see that system in its proper perspective, through lack of information about the rest of Australia. We can now see that the Aranda increase rites (*intichiuma*) are a special and somewhat abnormal variety of a widespread institution. In the normal form, as we have seen, each increase centre belongs to (is the possession of) a small patrilineal group which owns the country in which that centre is. It is therefore usually the members of this patrilineal group who perform the increase rites. This is so in Western Australia, in the Yukumbil of New South Wales, in Cape York Peninsula, and apparently in the Dieri. The Aranda system is abnormal, in that the increase rites are performed by persons who reincarnate certain ancestors, irrespective of their membership of any horde.

But it is possible to show that even in the Aranda tribe the association between an increase centre and the horde that owns it still exists. It seems that there are patrilineal hordes in the Aranda tribe, as elsewhere, and that the male members of a horde, all or nearly all, belong to one patrilineal moiety (consisting of two of the sections or four of the sub-sections). It seems also that in the country of a horde there are normally several increase centres for different natural species. Since the people of a horde spend a good deal of their time in their own country, or rather did so before they came under white influence, a fair proportion of the children would be conceived in that country and would therefore belong to one or other of the totem centres within it.

This explains how it comes about that the great majority of any one totem belong to one moiety of the tribe.[1] It also suggests an explanation of the fact that the headman of a totemic group must belong to the moiety with which the totem centre is associated. It seems likely that this may really result from a rule that a man cannot act as headman (*inkata*) in a totem group unless he belongs to the horde or local group in whose country the totem-centre lies.

It would seem that the real nature of Aranda totemism has been obscured, and that what we really have there is as follows :—

(1) A relation of a certain horde—*i.e.* a patrilineal local group (which is itself associated with one of the patrilineal moieties, to which the majority of its members belong)—with a certain number of totem-centres (which lie within the territory of the horde), and therefore with the mythical beings connected with those totem-centres.

(2) A special relation between the individual and one special totem-centre near which he was conceived, which might or might not be in his own horde, and between the individual and a particular mythical being of which he is in some sense a reincarnation or an emanation.

The examination of the distribution of increase ceremonies shows that (1) is very widespread in Australia, while (2) is, so far as we know, confined to a few tribes of the centre of the continent. The recognition of this enables us to view the Aranda system in proper perspective in relation to Australian culture as a whole.

I have dealt so far with only one aspect of the relation of man to nature in Australia. Another aspect that I now wish to deal with briefly, is the classification of natural species into groups corresponding to the divisions of society. The simplest form of this is found where there is a dual division of society into moieties, and a similar division of nature, or of a large number of natural species, into two parts, certain species being regarded as belonging to one moiety and others to the other. A more complex classification is found in such tribes as the Yualai, where each moiety is sub-divided into clans; and the natural species belonging to the moiety are similarly subdivided, some belonging to each clan.[2]

Where there are four sections,[3] we find in some regions that a certain number of natural species are regarded as belonging to each section. This seems to be the case in a large number of tribes in Queensland, and in some instances a person is not allowed to eat a species which is connected with the section to which he or she belongs.[4] Further research may show that some system of "section totemism," if it is to be so called, is widely distributed.

[1] Spencer and Gillen, *The Arunta*, p. 78.

[2] Parker, *The Euahlayi Tribe*, p. 15.

[3] I use the term "section" for what have more usually been called "matrimonial classes."

[4] Roth in *Records of the Australian Museum*, vol. viii. p. 102.

In the Yukumbil tribe, there is a classification of natural species as belonging to the four sections of the community. It is difficult to obtain now anything like a complete account of this classification, so that the following table only gives the classification of a few species which my informants were able to recall during a short discussion of the subject.[1]

Deroain.	Baraŋg.	Bandjur.	Banda.
kurunan ♂ kangaroo	*kuruŋara* ♀ kangaroo	*tandur* ♂ (black) wallaroo	*yaraiñ* ♀ (grey) wallaroo
		bulubaŋ ♀ rock-wallaby	*magoiñ* ♂ rock-wallaby
		kumaŋ ♀ *padimelan*	*kirabam* ♂ padimelan
miban eaglehawk	*wagañ* crow	*kagun* laughing jackass	*wurgulum* magpie
wagun scrub turkey		*panandjurgan* a small bird	— plain turkey
yuriñ emu			
yagam dingo		*bandjur* native bear	
yamul goana		*buniñ* porcupine	*biliŋ* bat

[1] To make this table clear, it is necessary to note the arrangement of the sections. Each section-name has a masculine and a feminine form, the latter formed by the feminine suffix *-gan* or *-an*.

Deroain	=	*Baraŋ*
(*Deraoingan*)		(*Baraŋgan*)
Bandjur	=	*Banda*
(*Bandjuran*)		(*Bandagan*)

This diagram reads :—

DEROAIN marries *Baraŋgan* children BANDA and *Bandagan*.
BARAŊ ,, DEROAINGAN ,, BANDJUR and *Bandjuran*.
BANDJUR ,, *Bandagan* ,, BARAŊ and *Baŋgagan*.
BANDA ,, *Bandjuran* ,, DEROAIN and *Deroaingan*.

It may be noted that animals of the kangaroo kind are treated differently from others. Thus the male kangaroo is called *kurumun* and is Deroain, while the female kangaroo, called by a different name, *kurangara*, is Barangan. Similarly with such animals as the wallaroo, padimelan, and wallaby. When the male animal is in the one section the female is in the section with which the first intermarries.

Amongst the birds, two species were spoken of as if they were feminine. The magpie (*wargalum*) was stated to be Bandagan, not Banda, and the *pinandjurgan* a small bird that lives on the edges of swamps, was called Bandjuran, not Bandjur.

It may also be noted that the native bear (*bandjur*) seems to give its name to, or derive its name from, the section to which it belongs.

There is no prohibition in the Yukumbil tribe against eating the animals belonging to one's own section.

So far as I could determine, there was no interrelation between this classification of natural species under the four sections and the system of local increase ceremonies. It is of course possible that an intensive study of the mythology (which it is now too late to carry out) might have revealed some connection.

I was unable to discover any evidence of similar classification in the Kumbaingeri or in the tribes further south, but I am not prepared to say that it did not formerly exist. In these broken-down tribes it is almost impossible to obtain certain evidence of the former non-existence of any custom or institution.

Are we to call this classification of natural species under the four sections of the kinship organization totemism, or shall we refuse to include it under that term? It does not perhaps matter very much, so long as we recognize that in a considerable number of Australian tribes such classifications are an important part of the whole system of relations between man and nature as expressed in ritual and myth.

These tribes of New South Wales also provide us with examples of what has been called sex-totemism. In the Yukumbil tribes the bat (*bilij*) belonged to the men, and the night-hawk (*wagamgañ*, or *koiyumgangañ*) belonged to the women. If any women killed a bat there would be a fight between the men and the women: and, vice versa, if the men were annoyed with the women, they would kill a night-hawk and there would be a fight.

In the Kumbaingeri, Yegera and Dangati tribes the bat (Kumbaingeri, *girimbarij*; Yegera, *giribêniy*) was the representative of the men, but it was a species of woodpecker (Kumbaingeri, *miyu*: Yegera, *noromiragan*) that was the representative of women. There is a legend that it was this bird that first taught women how to climb trees. The bat is described as being "clever," *i.e.* skilled in magic.[1] A native pointed out to me that the bat and the woodpecker have this in common that they both live in holes in the trees.

[1] A medicine-man is described in blackfellow's English as "clever," and the same adjective is applied to a *djurbil* or *mirera*—it is a "clever" place.

Father Schmidt selects this sex-totemism as characteristic of one of the culture-strata into which he seeks to analyse Australian culture. It would be very unsafe to assume, however, as Father Schmidt seems to do, that this institution is confined to the south-east corner of the continent. When it is definitely looked for it may quite possibly be discovered elsewhere. Moreover, even if sex-totemism does not exist there, we still find a very definite connection between the bat and the male sex in the extreme north-west of the continent.

This little strip of New South Wales coast therefore affords us examples of localized increase rites, of classification of animals under the sections, and of sex-totemism, all three of which are widespread institutions in Australia. In addition it gives us the *bugar* of the Dangati tribe, a form of "totemism" which has not been recorded before.

I suppose there is no subject that has received more attention in anthropological literature than Australian totemism, and yet it seems that we are still very far from having any real understanding of that institution, of its meaning and function. One reason for this has been the scantiness of our information. This will be remedied to some extent by the researches now being carried out by the Australian National Research Council. But it must be remembered that these researches can now cover only a part of the continent. There are many tribes which it would have been possible to study twenty or even ten years ago that are now for ever lost to us, all memory of their former customs having gone.

But I believe that another reason for the failure to comprehend totemism has been due to the method of approaching the problem. We shall reach an understanding of totemism only when we have a satisfactory theory of the much wider problem of the relation in ritual and myth between man and nature in the less developed societies. This needs to be studied in non-totemic peoples as well as in totemic societies.[1] And it necessarily involves a general theory of the social function of ritual and myth.

[1] Brown, *The Andaman Islanders*, ch. V and VI.

AN AUSTRALOID SKULL FROM THE CAPE FLATS.

[With Plates XXXI–XXXIII.]

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The antiquity of man in Europe has not been definitely established, and a sequence of human types and associated cultures has been traced from very remote to recent times. There is abundant archæological evidence that South Africa has also been for a very long time the scene of human activity, inasmuch as a series of palæolithic cultures, comparable in type to those of Europe, have been discovered over a widespread area, although so far no exact geological time-scale has been laid down for them. Nor do we know much of the men who made these stone implements, since the various human fossil finds have had hardly any correlation with the different cultures.

Evidence, however, is accumulating that in South Africa there has been a sequence of human types, ranging from the most primitive fossil forms through more advanced types to our present aborigines, and there is a prospect of associating them with the well-established sequence of cultures. There can be no doubt that this sequence of men and of their handiwork has an important bearing on European archæology, and the fact that the primitive types and cultures have survived into modern times brings the prehistoric problems closer to us. It becomes incumbent on us therefore to examine every document that seems to bear on these relationships, even if its age is not obviously great.

In a recent paper on the yellow-skinned races of South Africa, Broom (1) referred to certain Australoid traits that he detected in a group of Koranna skulls, and he described definite Australoid features in a skull found at Bayville, near Port Elizabeth, postulating the presence at one time of an Australoid race in South Africa. Subsequently, Allen (2), working in collaboration with Professor Dart, described a skull from Mistkraal, Cape Province, about 70 miles west of Port Elizabeth, which gave indications in the same direction.

It must be admitted, however, that although there is this evidence of an Australoid strain in a limited number of South African skulls, which is explicable if we admit Rhodesian man into the South African prehistoric pedigree, the very

noteworthy absence of Australoid characters from our existing races makes one hesitate, to quote Dr. Broom's words, "to speak of a South African Australoid race, before one is in a position *to declare the quads*."

Early this year the author was fortunate in finding a skull that gives further justification for Dr. Broom's thesis, inasmuch as it fulfils most of the conditions imposed by the term *homo australoides africanus*. It should be explained at once that in using this term, which may or may not be the most appropriate but which has now come into use, one is not predicating complete identity with the Australian aboriginal, but is merely stressing affinities in this direction. In addition to this linkage there are very definite affinities to the Galley Hill–Brux–Brünn group in Europe, which add to the importance of the bearings of this skull on human ancestry.

The skull was found in a sand quarry near Capetown on the Cape Flats, a low-lying isthmus just above sea-level uniting what is known as the Cape Peninsula to the mainland, and extending from the Atlantic to the Indian Ocean (Pl. XXXI, Fig. 1). It was associated with a number of stone implements, including some very unusual types, which Mr. A. J. H. Goodwin, M.A., has kindly described in a separate paper (*see* p. 429).

DESCRIPTION OF THE SITE.

Professor Andrew Young, D.Sc., was good enough to accompany me to the site, and he described it in the following words: "The main quarry is a wide excavation reaching in its deepest part to a depth of about 14 feet. The vertical section exposed along the sides of this excavation shows on the top 3 feet of light-coloured sand, beneath which there is evidence of an old land surface—a brown layer graduating downwards again into light-coloured sand (*see* Pl. XXXI, Fig. 2). The sand under the land surface shows a considerable amount of stratification, but in places there is most distinct diagonal bedding indicating that the stratification is due to wind deposition and not to water (*see* Pl. XXXI, Fig. 3).

"The sand grains, from the surface down to the deepest part of the excavation, are all rounded, indicative of a wind-drift origin for the whole of it.

"In the dark layer representing the old land surface a considerable amount of sand is clotted into ferro-crete nodules due to cementation by iron hydroxide. This cementation was obviously due to capillary rise of the ground water and evaporation, with consequent deposition of the dissolved mineral content at or near the surface."

When the quarry was first visited numerous fragments of the skull bones, etc., were found on the top of a heap of ferro-crete nodules, stones, implements, etc.,

which had been sifted out to purify the sand for building purposes. Other pieces of bone, teeth, and implements were found scattered over the floor of the quarry.

After the fragments of the skull had been pieced together, it became obvious, especially from the outer fragment of the brow ridge and from the large size of the teeth, that an unusual type of skull had been unearthed. Although many, but not all, of the implements were such as one usually associates with the Bushman, here was a type of skull with hardly any Bushman characters whatsoever.

Accordingly a search for further fragments was instituted, and with the help of a few volunteers a considerable quantity of sand was sifted through a fine-meshed sieve. This was like looking for the proverbial "needle in a hay-stack," but we were rewarded by finding almost the whole of the brow ridge of one side, two temporal bones, the chin parts of the mandible, and a femur.

Fragments of another skull, probably of a different type, have also been found, but they are insufficient for a satisfactory reconstruction. The cranial parts of this second skull are exceedingly thick, and the shape of the lesser and greater wing of one side of the sphenoidal bone betokens an exceedingly small temporal pole to his brain. Fragments of limb-bones, belonging to at least three different individuals, and some of them of the ordinary Bushman type, have also been found.

The stone implements were found in the heaps of ferro-crete nodules removed by the commercial process of sifting the sand; many were also found scattered over the floor of the quarry; a few were found *in situ* on the old land surface. The reddish tint of the bones suggests that they must have been lying in contact with the brown layer of this old surface, and this is the position ascribed to them by the quarry-master. The fact that there are no surface implements to be found in the neighbourhood of the quarry also supports the view that the stone implements and bones were related to the old land surface before they were disturbed and revealed by the excavation.

Description of the Skull.

The cranium is almost complete, and where any part is wanting on one side it is represented on the other side, so that any restoration applied to it does not affect the measurements or conclusions to any appreciable extent. The face is represented by one maxilla, and by the body of the mandible. The absence of the nasal bones and of the zygomatic (malar) bones has seriously impaired the value of the facial region, and the reconstruction applied to it is to be regarded as provisional, pending the recovery of other fragments, which may yet turn up. The teeth, half the palate,

and the *symphysis menti* (chin) have, however, given valuable data regarding the face. The skull, as reconstructed, is shown in the accompanying photographs and drawing (Pls. XXXII and XXXIII, and Text-fig. 1.)

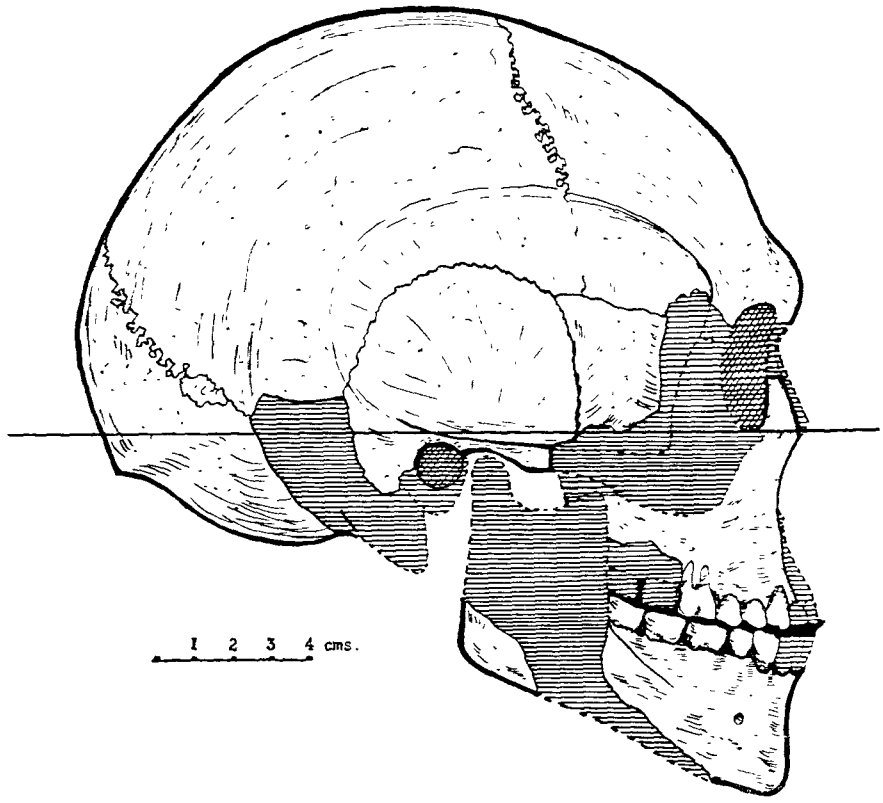


FIG. 1.—DIOPTOGRAPHIC (PROJECTION) DRAWING OF THE CAPE FLATS SKULL, ORIENTED ON THE FRANKFORT PLANE. ($\frac{1}{2}$.)

THE CRANIUM.

Mr. I. Zieve, B.A., has submitted the cranium to the detailed method of analysis devised by Schwalbe for the study of human crania, a method used by Berry and Robertson on Tasmanian and Australian crania, and by Slome (3) on Bushman crania. In this investigation the various chords, arcs, angles, etc., of the cranium are measured on a dioptographic drawing of the skull. The following are his results, and for comparison reference should be made to the data for prehistoric and modern crania collected by the above authors, and contained in Slome's paper.

1. Glabella-inion length	187·75 mm.
2. Calvarial height	97·75 mm.
3. Calvarial height index	52·06
4. Maximum breadth	133·00 mm.

5. Calvarial height-breadth index	73·50	
6. Half the sum of glabella-inion length + breadth	160·38	mm.
7. Calvarial height-$\frac{1}{2}$(glabella-inion length — breadth) index	60·95	
8. Distance of calvarial height foot-point from glabella	101·00	mm.
9. Calvarial height foot-point positional index	53·79	
10. Frontal angle	79·75	deg.
11. Bregma angle	56·40	deg.
12. Distance of bregma foot-point from glabella	58·13	mm.
13. Bregma foot-point positional index	30·96	
14. Length of frontal arc	122·00	mm.
15. Length of frontal chord	111·13	mm.
16. Curvature index of os frontale	91·08	
17. Angle of frontal curvature	147·25	deg.
18. Length of chord of glabellar part of frontal	33·25	mm.
19. Length of chord of cerebral part of frontal	84·90	mm.
20. Glabellar-cerebral chord index	39·16	
21. Length of parietal arc	122·50	mm.
22. Length of parietal chord	116·63	mm.
23. Curvature index of os parietale	95·20	
24. Angle of parietal curvature	140·00	deg.
25. Parietal-frontal arc index	100·40	
26. Lambda angle	76·88	deg.
27. Opisthionic angle	37·50	deg.

When these values are compared with corresponding values for the Bushman cranium (3) there is an almost complete lack of correspondence. On the other hand, when compared with corresponding measurements taken from the Galley Hill, Brux, Brunn group and when compared with the same measurements for the Australian, there is a very close correspondence.

Again, when these results are taken together and given a proportionate numerical value by the method devised by Cross (4), and used by Berry, and with modifications by Slome (*ibid.*), it is found that this Cape Flats skull gains 60·8 per cent. of the available morphological values. This should be compared with 37·7 per cent. gained by Neanderthal man, with 68·4 per cent. gained by the Galley Hill, Brux, Brunn group, with 77·6 per cent. gained by the Australian, with 88·0 per cent. gained by the Bushman, and with 91·1 per cent. gained by the European.

The Supraorbital Ridges.

The prominence of the supraorbital ridges, amounting almost to a *torus orbitalis*, and associated with a post-orbital depression and a sloping forehead, is

one of the special features of this skull and differentiates it from the Bushman and from the Bantu with their more or less flattened glabellar region. Although not nearly so massive as in Neanderthal man, it is noteworthy that three of the measurements in this region, included in the above list of cranial data, are identical with the Neanderthal measurements, so that it is no exaggeration to describe the forehead as "Neanderthaloid."

There is this important difference, however, that whereas in Neanderthal man and in the Australian, as pointed out by Cunningham (5), the brow ridges are thick masses of bone with, as a rule, small frontal air-sinuses, in this skull the brow ridges are inflated by large frontal sinuses. These sinuses extend for a distance of 3·5 cms. up into the frontal bone, and for a distance of 4·5 cms. on each side of the middle line. Considering the thin egg-shell nature of the walls of these sinuses and the extreme brittleness of the bones in general, it is remarkable that any part of the brow ridges was recovered.

It is generally held that there is little correlation between the size of the brow ridges and the size of the underlying frontal sinuses, small sinuses being associated with big ridges, and vice versa. In the present state of knowledge, therefore, no one would be justified in saying that the prominence is primarily due to the sinuses. Rather is it more likely, considering the associated sloping forehead, that this was a type with prominent ridges, which have become secondarily excavated either in this individual or in this race by the frontal air-sinuses.

The Endocranial Cast.

The sloping forehead bespeaks a feeble development of the frontal lobes of the brain, and this is clinched by the appearance of the endocranial cast. In Pl. XXXIII. Fig. 2, a cast of the right side of the skull is compared with a cast from a modern European skull. Both casts are about the same length, but it is obvious that the frontal region of the brain of the Cape Flats man must have lacked the full rounded form distinctive of modern man and shown by the specimen illustrated. In fact, when the frontal region of this Cape Flats cast is compared with that of Rhodesian man it is found to be even more depressed than the latter, so that it can justly be termed "Neanderthaloid."

In addition to this want of fullness in the frontal region there is a well-marked depressed area at the upper part of the parieto-occipital junction, which again shows an affinity to Rhodesian man (6). The general shape and configuration of the cast, however, resembles the cast of an Australian skull more than that of any other type.

The cranial capacity, estimated by displacing water with the endocranial cast, is 1,230 c.c., a figure which is very close to the average for the Australian aboriginal, and which is lower than that of Rhodesian man (1,300 c.c.).

General Characters of the Skull.

The cranium has already been examined in considerable detail, but there are still a few points to be dealt with. Thus, the cranial bones are only of average thickness, measuring from 5 to 6 mm. at the side of the inion and in several other regions of the skull. This does not add to its status, rather might it detract from it, seeing that in the apes and in Rhodesian man the skull is only of average thickness.

When one looks down on the vault its shape is very similar to that of the Australian. The maximum length is about 191 mm., and the maximum breadth about 132 mm., there being a doubt as to whether the glabella lay a little further back than the brow ridges as in the reconstruction or a little further forward, and there is a slight amount of lateral narrowing due to compression or warping, but the effect of these on the results is insignificant. The cephalic index is 69·1, that is to say it is hyperdolichocephalic. The basion-bregma height is 129 mm., so that the height-breadth index is 97·7; the supra-auricular height is 107 mm.

The face has had to be restored to a very considerable extent, so that it can only be treated in a very general manner. The face seems to be decidedly leptoprosopic, presenting the European rather than the Negro proportions.

The nasal aperture is moderately narrow relative to its height, but is negroid in having a definitely rounded lower border. The jaws are slightly prognathous; the palate is narrow and elongated and has an elevated vault. The mastoid processes project prominently as in the European and Negro, and are totally unlike the short stumpy processes of the Bushman. The chin is distinctly prominent as in the European, but as Broom (7) has recently pointed out, this need not be taken as necessarily a modern characteristic.

On the whole it may be concluded that the face represents both European and Negro characteristics. The other features of the skull, however, and the surrounding circumstances of the find would seem definitely to preclude the idea that this skull might have belonged to any half-bred product of a fusion between the European and the Bantu races that have come to South Africa in historical times, and who might have been intruded amongst the prehistoric relics as, for example, by a burial. A much more probable explanation of the apparent blend of characters of different races is to be got by regarding this Cape Flats individual as representing a pre-Bushman and pre-Negro type, fulfilling Sir Arthur Keith's postulate that "As we trace the ancestry of the African Negro backwards in time we shall find him approaching the common ancestor from which his and the European type were evolved" (8).

DENTITION.

The teeth of the Cape Flats skull present some interesting features, especially with regard to their dimensions. The twenty available measurements are contrasted with corresponding measurements for Bushman, Bantu, and Australian aboriginal teeth in Tables I and II. The measurements from another little-known prehistoric skull from South Africa, found by Mr. Peers at a considerable depth in the floor of a cave at Fish Hoek and associated with the Still Bay industry, are also included in the table as affording an extraordinary contrast in point of size. The figures for the three groups of skulls included in the tables were derived from the study of a large number of teeth by Drennan (9), Shaw and Campbell (10).

This comparison shows that three-fourths of the available measurements are far in excess of the Bantu average, whilst half of them exceed the Australian average. The Bantu maximum in Shaw's group of skulls is equalled or exceeded by almost half the measurements. Incidentally, it might be mentioned that Shaw's results show that for purposes of comparison the dimensions of the Bantu teeth may be taken as identical with those of European teeth.

In addition, the *dental length*, in a mesio-distal direction, of the premolar and molar teeth of the lower jaw is 50 mm., which may be compared to the following corresponding measurements, 45·1 mm. for the Bushman, 46·5 mm. for Bantus, and 49·6 mm. for Australians. Although there is this evidence of very considerable mesio-distal size in the teeth of the Cape Flats man, it is noteworthy that as regards the individual teeth it is the bucco-lingual dimension that is so often greatly enhanced in size. This is shown by the rise in the dental index of all the teeth, and is indicative at least in the molars of an ultra-human specialization, that must be of considerable importance in the final adjudication of the status and relationships of this skull.

Inasmuch therefore as the dimensions of the teeth exceed in some respects the Bantu maximum, and are equal to and sometimes greater than the average for the teeth of Australian aboriginals, it seems justifiable to regard this skull as being in an entirely different category from the Bushman and the Bantu.

The teeth of this skull are only moderately worn down, the dentine, however, being exposed in most of them. The first upper right molar, the only upper molar recovered, has four cusps; the three lower molars on both sides have each five cusps. An X-ray examination shows that the teeth are "cynodont," although the second left lower molar has a pulp cavity of considerable size.

THE FEMUR.

Amongst the fragmentary bones recovered there was a complete femur. The colour of this bone corresponds to that of certain of the cranial fragments, so that it is quite likely that it belonged to the same individual as the skull described above.

Table I.

Upper Jaw.		Bushman.	Bantu.	Australian.	Cape Flats.	Fish Hoek.
1st Incisor ...	M.D. ...	8·2	8·9	9·4	—	7·0
	B.L. ...	6·5	7·2	7·9	—	6·5
	Index ..	79·3	80·2	84·0	—	92·9
2nd Incisor ...	M.D. ..	6·7	7·3	7·7	—	5·4
	B.L. ...	6·0	6·4	6·9	—	6·0
	Index ..	89·6	87·9	89·6	—	111·1
Canine	M.D. .	7·4	7·7	8·4	7·5	6·6
	B.L. ..	7·7	8·3	9·0	9·5	7·5
	Index ...	104·1	107·7	107·1	126·7	113·6
1st Premolar ..	M.D. ...	6·7	7·5	7·8	7·5	5·2
	B.L. ..	8·6	9·1	10·3	10·5	7·8
	Index ..	128·4	120·7	132·1	140·0	150·0
2nd Premolar ...	M.D. ..	6·5	7·1	7·2	7·0	5·4
	B.L. ...	8·5	9·1	10·1	10·5	8·0
	Index ...	130·8	128·9	140·3	150·0	148·1
1st Molar	M.D. ...	9·8	10·3	11·4	10·0	9·0
	B.L. ...	10·6	11·0	12·8	12·5	11·0
	Index ...	108·2	106·3	112·3	125·0	122·2
2nd Molar ...	M.D. ...	9·7	9·9	10·9	—	9·0
	B.L. ...	10·7	11·1	13·1	—	11·2
	Index ...	110·3	110·3	120·2	—	124·4
3rd Molar	M.D. ...	8·1	8·8	10·0	—	6·8
	B.L. ...	10·3	10·8	12·3	—	9·0
	Index ...	127·2	123·6	123·0	—	132·4

Table II.

Lower Jaw.		Bushman.	Bantu.	Australian.	Cape Flats.	Fish Hoek.
1st Incisor ...	M.D. ...	5·0	4·9	6·0	—	4·3
	B.L. ...	5·2	5·4	6·3	—	5·0
	Index ...	104·0	110·6	105·0	—	116·3
2nd Incisor ...	M.D. ...	5·6	5·8	6·7	—	5·0
	B.L. ...	5·6	6·0	6·6	—	6·0
	Index ..	100·0	103·8	98·5	—	120·0
Canine	M.D. ...	6·8	7·1	7·6	7·0	6·1
	B.L. ...	7·0	8·0	8·3	9·0	7·4
	Index ...	102·9	112·8	109·2	128·6	121·3
1st Premolar ...	M.D. ...	6·9	7·2	7·6	8·0	5·4
	B.L. ...	7·5	8·0	8·8	9·0	7·0
	Index ...	108·7	112·0	115·8	112·5	129·6
2nd Premolar ...	M.D. ..	7·0	7·3	7·7	7·5	5·5
	B.L. .	7·8	8·2	8·9	9·0	7·4
	Index ..	111·4	112·8	115·6	120·0	134·5
1st Molar	M.D. ...	10·8	11·0	12·3	11·8	10·4
	B.L. ...	10·1	10·4	11·9	11·8	10·0
	Index ..	93·5	93·7	96·7	100·0	96·2
2nd Molar ...	M.D. ...	10·5	10·6	12·5	11·5	10·3
	B.L. ...	10·0	10·2	11·7	12·0	10·5
	Index ...	95·2	95·6	93·6	104·3	101·9
3rd Molar	M.D. ...	9·7	10·6	11·0	11·3	8·3
	B.L. ...	9·5	10·0	11·1	11·5	9·5
	Index ...	97·9	94·9	93·3	102·2	114·5

In fact the findings regarding it are in complete harmony with the findings on the skull.

Thus, it strongly resembles the Galley Hill femur, although it is more robust and considerably longer. It shows the same extreme degree of upper platymeria, low pilastering dimensions, and the shaft expands gradually towards the lower extremity. In this femur the upper platymeric index is 66; the pilastric index is 99; and the lower platymeric index is 85; the length of the femur being 46·7 cms. Calculated from the length of the femur by various formulæ, the stature of this individual must have been about 5 feet 6 or 7 inches.

Summary and Conclusion.

The foregoing paper contains a description and discussion of the characters of the skull and femur of an unusual human type found in a quarry on the Cape Flats near Capetown. With this skull were found the remains of one or two totally different individuals, probably ordinary Bushmen. A considerable number of stone implements were associated with the human remains, and they present two quite different facies, a number belonging to the ordinary Bushman culture of the "kitchen-middens," others being much more primitive, and a few quite new to science. Near-by is Stellenbosch, the type station of the South African Chellean-Acheulean culture; a mile or two away are rich sites of the Still Bay culture, the Mousterian-Solutrean industries of South Africa, to which a number of the quarry implements belonged. With these surrounding circumstances and in the light of the evidence afforded by the bones themselves it is difficult to escape the conclusion that this individual represents one of the human links between Mousterian and modern man.

The author wishes to take this opportunity of extending his thanks to Mr. Gerald McManus, who suggested a visit to the quarry and directed him to it; to Mr. I. Zieve, B.A., for investigating the cranium; to Mr. A. A. Lamb for photographing the specimens; and to these three gentlemen and to Mr. J. Friedlander and Mr. S. Paul he is greatly indebted for much help with the shovel.

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FIG. 2.—PROFESSOR YOUNG POINTING TO THE OLD LAND SURFACE ON THE VERTICAL SECTION OF THE QUARRY WALL.



FIG. 3.—PROFESSOR YOUNG INDICATING THE DIAGONAL BEDDING ON THE VERTICAL SECTION OF THE QUARRY WALL.



FIG. 1.—GENERAL VIEW OF THE SAND QUARRY WHERE THE SKULL WAS FOUND.



FIG. 1.—NORMA FRONTALIS OF THE CAPE FLATS SKULL, ORIENTED ON THE FRANKFORT PLANE.



FIG. 2.—NORMA LATERALIS OF THE CAPE FLATS SKULL, ORIENTED ON THE FRANKFORT PLANE.

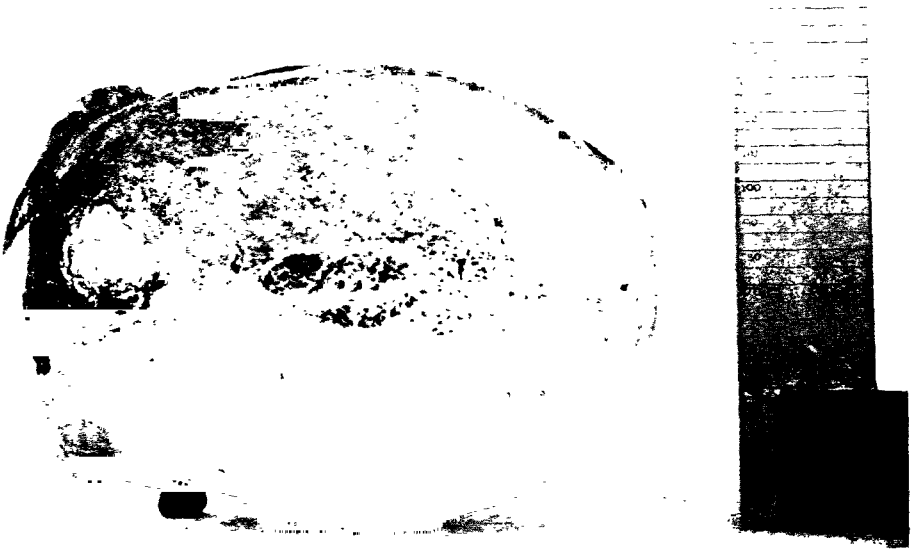


FIG. 1.—NORMA VERTICALIS OF THE CAPE FLATS SKULL, ORIENTED ON THE FRANKFORT PLANE.



FIG. 2.—ENDOCRANIAL CAST OF THE CAPE FLATS SKULL (LEFT) TOGETHER WITH THAT OF A RECENT EUROPEAN SKULL (RIGHT).



FIG. 3.—SIDE VIEW OF THE CAPE FLATS SKULL WITHOUT THE MANDIBLE.

(5) Cunningham, D. J. "The Evolution of the Eyebrow Region of the Forehead." *Trans. Roy. Soc. of Edin.*, vol. xlvi. part ii. 1908.

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REPORT ON THE STONE IMPLEMENTS FOUND WITH THE CAPE FLATS SKULL.

[With Plate XXXIV.]

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[*Note.*—Throughout this paper my own South African archæological terminology has been used: for the European reader it would be as well to point out that the Middle Stone Age parallels the Mousterian of Europe, but often in evolved forms. The Later Stone Age parallels the Upper Palæolithic together with the Mesolithic periods (*i.e.* "Neoanthropic" industries). The parallels are in technique and not in time. For a fuller exposition the reader is referred to M. C. Burkitt, "South Africa's Past," 1928, Cambridge University Press; or to Goodwin and Lowe, "Annals of the South African Museum," Capetown, vol. xxvii. 1929.]

The Material.

Through the kindness of Professor M. R. Drennan I have been enabled to make two visits to the site on which he discovered fragments of two skulls. The first of these he has been able to reconstruct, and it belonged to an individual with extremely marked Australoid characteristics (*see* p. 417 ff.). The second could not reasonably be restored, but so far as can be seen, it shows San (Bush-Hottentot) features.

The sand-pit had been excavated to a depth of ten feet or more and had been worked fairly extensively before our arrival. It was thus impossible for Professor Drennan to discover anything but skull fragments and implements, and neither in the first instance *in situ*. Both had to be retrieved from the tailings, heaps left after sieving the sand for building purposes. As a result the implements found by us are probably not completely typical, and many smaller implements and flakes may have passed through the riddle and have been incorporated in the cement. The fragments had passed unnoticed, and though the contractor gave us every assistance, he was quite unable to point out to us the exact positions of the finds.

The problem of association is a difficult one, and will be referred to again in my conclusions. Two main periods will be found to be represented at this site—a prehistoric and an historic; on the first of these much more will be said. Of the

second period triangular bricks and a fragment of china remain. The possibility that one or both of the skeletal remains must be associated with this historic period is present, but it is fairly certain from the types of local soil attached to the objects, that the skeletons are both from the level below that of the historic materials. The bricks show the presence of surface roots, while the bones show that they have been enclosed in soil similar to that of the deeper brown levels of the pit. The historic material seems to have lain immediately beneath the white surface sand.

The Artefacts.

Grooved Stones.—Some thirty rough stones, generally in the region of 100–150 c.c. were found having a series of cuts or grooves incised about them (Pl. XXXIV. No. 1). These grooves run in all directions, but seem to run chiefly towards the angles of the stones. The material in each case consists of a soft sandstone, shale, or some similar material, either heavily oxidized and patinated, or of a naturally soft material. The oxidized crust in the only specimen showing a section is about $\frac{1}{4}$ inch (6 mm.) in thickness. In each case the consistency of the external surface is within the range of plaster of Paris, and can be scratched by the human nail. The original material consisted both of stones showing the action of water-rolling and also of natural rock fragments. They seem to have been chosen for their soft consistency, and the extreme patination visible in certain of the stones cannot be regarded as having occurred since the incisions or cuts were made. The stones are in most instances shapeless, but some three or four specimens seem either to have been rounded by the mechanical process involved in their use or to have been chosen originally for their naturally rounded shape. A single large specimen, consisting of a half-broken water-worn slab of soft shale, measuring 30 cm. square by 7·5 cm. thick, is represented. The stone shows the rough cuts or incisions typical of this group, but they are not presented on the flat faces of the stone, and are confined to the edges.

Use.—When examining the stones originally, I concluded that they were of the nature of sharpeners for preparing light bone needles, or tools of an awl-like nature from soft materials such as fish-bone or wood. The grooves or cuts are in no instance deeper than 2 mm., while the width is similar (1–2 mm.). Usually they are from 6 to 12 mm. in length and straight, but in a few cases they are curved, though close examination shows the curve in some instances to be due to the junction of two or more otherwise straight cuts to form a single curve. The marks taper at one end to a point, the angle being in the neighbourhood of 10 deg. One very important fact had escaped my attention in the first instance, namely, that each cut, where the whole was visible, formed a complete elongated isosceles triangle with a base 1 or 2 mm. across, and a height of 6–12 mm. The incised portion is thus entirely sunk beneath the surface and could not have been made by the

process of sharpening. Each incision thus seems to have been due to a single glancing stab or jab given with a sharp tool of harder material. Judging from a putty impression, the section of each cut seems to have been between the square and the semicircular.

We are thus faced with the possibility that these stones formed anvils in a pressure technique, the instrument used in pressing off secondary chips from a flake tool expending its surplus energy in cutting into the softer anvil.

Bored Stones (Pl. XXXIV. Nos. 2 and 3).—(1) A broken half-bored stone was discovered: the hole had been bored from one face only to a depth of 45 mm.: the width of the hole at the mouth is also 45 mm. The material is a purplish sandstone: the outside is not smooth though it shows signs of a river pebble origin.

Dimensions:

Diameter of stone	114 mm.
Depth	70 mm.

The depth of the stone is thus very much greater than the diameter of the hole; (2) another bored stone is small, and of brownish sandstone. The exterior is water-worn and rolled.

Dimensions:

Diameter of hole at mouth	37	40 mm.
,, ,, centre	37	40 mm.
Maximum diameter of stone	78 mm.	
Average ,, ,,	72 mm.	
Depth of stone	42 mm.	

The depth of the stone is only 2 mm. greater than the width of the mouth of the hole, a ratio typical only of the Cape Peninsula.

Pebble Material.—There is a large amount of pebble material of Table Mountain sandstone origin, all showing signs of human usage. This group is typical of the coast, though indeed it is represented at many inland sites of all periods. At the coast the midden sites show large numbers of beach-stones which have been shaped by use and not designedly made for their purpose—which seems to have been the fracture of sea-shells. There are very few shells present on this site, but the distance from both the Atlantic and Indian coasts of the Peninsula is not more than seven miles, and the pebble material is identical with that of the midden-folk. Here a parallel may be visible with Wayland's pebble types.[1]

[1] E. J. Wayland, "Some Account of a Pebble Industry in the Transvaal," *Trans. Roy. Soc. S. Af.*, 1928.

Rubbers and Grinders.—There are about ten specimens of these objects which are composed of natural pebbles, one face of which has been flattened in each instance through use as a grindstone. In only a few instances can the pecked hollow in the centre of this grinding face be seen (Pl. XXXIV, No. 5), but it is certainly present in a few specimens, which implies a strong link with the Wilton industry. Normally, these grinding-faces tend to curve over into the natural waterworn pebble-face of the boulder, but in one instance the ground face and the boulder surface form a perfectly defined angle at their junction (Pl. XXXIV, No. 4), implying the use of a flat netherstone which had not yet had time to become grooved.

Peckers and Abraders.—Two or three river pebbles showing signs of use as light hammers are present. The corners and ends are beaten down, leaving a roughly pecked surface (Pl. XXXIV, No. 6).

Chipped and Flaked Pebbles.—A number, perhaps thirty, of the pebbles have been more hardly used, flakes an inch or so square have been removed either from about the whole perimeter, or from one end or one side. No definite implement forms are represented, but all show signs of usage of a rough sort. The flakes may have been intentionally removed, or struck off accidentally in the process of hammering. A few specimens may be regarded as chopping-stones of a crude type, but they are not conventional in form.

Discoidal Artefacts.—Three or four stones of the discoidal artefact or fabricator type were found. These consist of stones, often river pebbles, from about the perimeter of which flakes have been removed. They seem to be typical of no one South African industry, though the sizes vary from period to period. These specimens have a variation of 60–90 mm. in diameter, sizes compatible with either Wilton or Still Bay material.

Heavy Scrapers.—(1) A single large endscraper, comparable in size to a *coup-de-poing*, and made of Table Mountain sandstone, is represented. The dimensions are: length, 145 mm.; breadth, 90 mm.; thickness, 45 mm. It is worked along two edges and the one end on a large flake. The flake face has been struck to remove trimming flakes of roughly 600 square mm. (say 1 square inch).

(2) A smaller specimen (Fig. 1, No. 2), measures 77 mm. by 70 mm. by 25 mm. It is made similarly on a flake, in this instance of surface quartzite. It is trimmed about the circumference except for what appears to have been the original striking platform used in removing the flake from its core.

(3) A single very large stone slab, which is roughly flaked to shape, shows no signs of secondary trimming. It measures 150 mm. by 135 mm. by 15 mm., and it consists of two cleavage faces lying parallel to each other and forming the two faces of the slab. The material is surface quartzite.

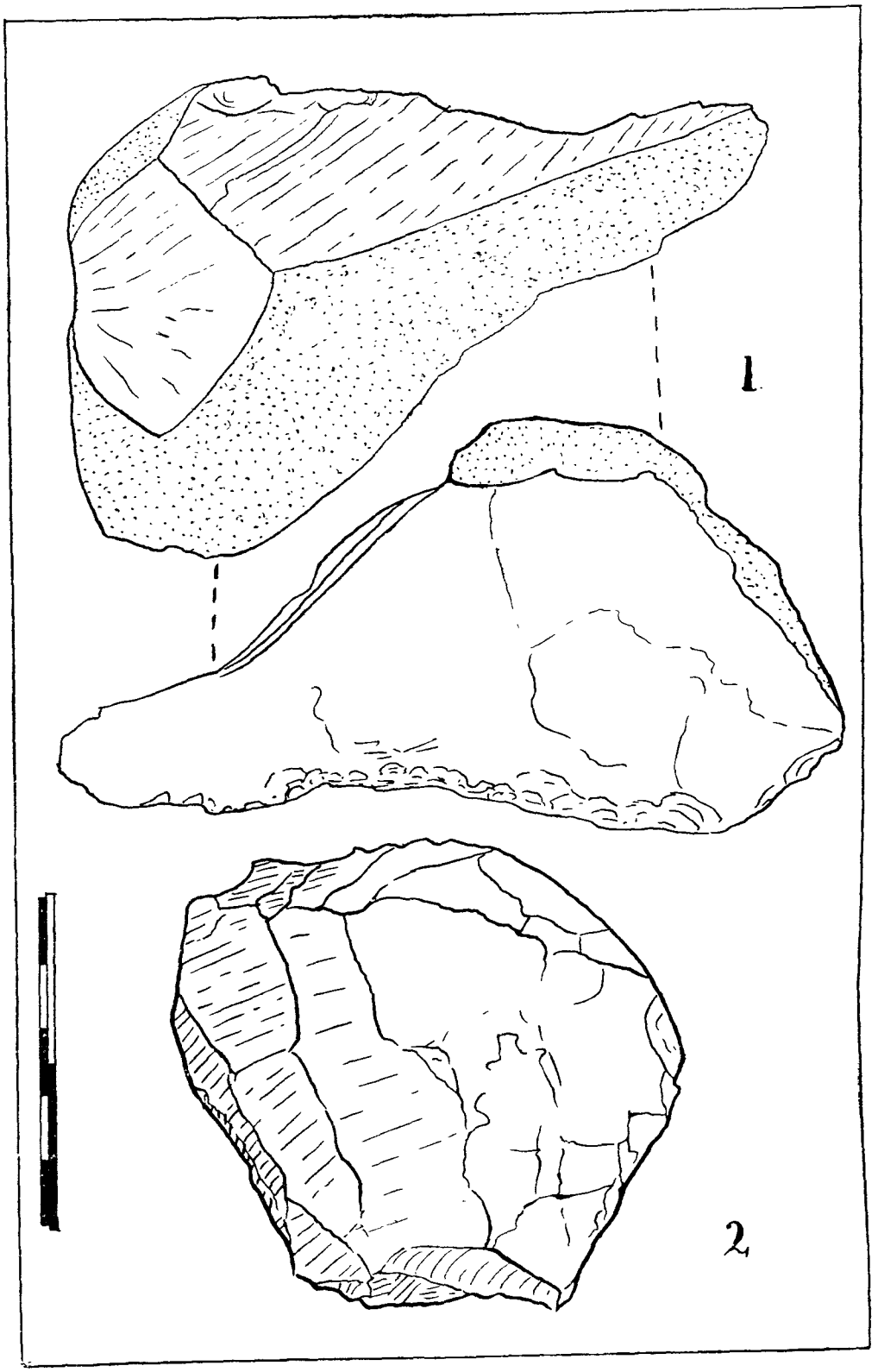


FIG. 1.—1. POINT-LIKE TOOL, SHOWING REMAINS OF WATERWORN PEBBLE
2. ROUGH, THICK, CIRCULAR SCRAPER.

(4) A slightly worked flake from a pebble source and of surface quartzite is shown in Fig. 1, No. 1. It is awl-like in shape. A small portion of the cleavage face shows signs of working or usage from the pebble face.

Dimensions:

Length	170 mm.
Maximum width	70 mm.
Maximum thickness	20 mm.

Smaller Flake Material (1).—A "quarter-lemon" or re-directing flake, 60 mm. in length; the "outer" face is worked by the removal of a number of small flakes. The material is surface quartzite (Fig. 2, No. 1).

(2) *Cores.*—These are all small (Fig. 3, Nos. 1 and 5), and generally show flake scars about 2 cm. long. The striking platform is in every case flat, and no facetting is visible; they are thus typical of the Later Stone Age cores, a fact which is confirmed by their shape. None are very neatly made (the two best are illustrated), and in none do we get any sign of a final trimming to a circular platform.

(3) *Scrapers.*—(*a*) An endscraper, trimmed at one end (Fig. 2, No. 3). The specimen is thick and ugly, measuring 30 mm. in length by 14 mm. wide by 9 mm. thick: this is probably due to the material used, which is a coarse surface quartzite; (*b*) Two rod-scrapers, slug-like in shape, worked along each edge but without trimming at the end (Fig. 2, Nos. 2 and 4): (*c*) Various rough scrapers. None are well made; all are compatible with either the Middle Stone Age or the Later Stone Age, but are typical of neither: (*d*) Worked fragments of Table Mountain sandstone and white quartz. All are badly made, and no well-made tools appear.

Modern Elements.—Certain modern elements are represented from the site, but cannot be associated with the skeletal remains. They were found directly beneath the white wind-blown sand of the surface, while the skeletal material and flakes are from within the darker sand below that level.

(1) *China.*—One fragment of heavy thick china, of white clay with a heavily glazed crackled surface bearing a blue floral design. Typical of the early Dutch household china imported to the Cape.

(2) *Brick.*—Some thirty or forty bricks of peculiar form. Placed together in sets of six these bricks make up complete circles, each brick forming a sixth of a circle about 30 cm. across, cut before baking. The bricks are baked all through evenly, and to a red colour. The baking is of a type not attempted in South Africa until comparatively recent times, and these specimens are in all probability imported, but attempts to trace their origin have so far failed.

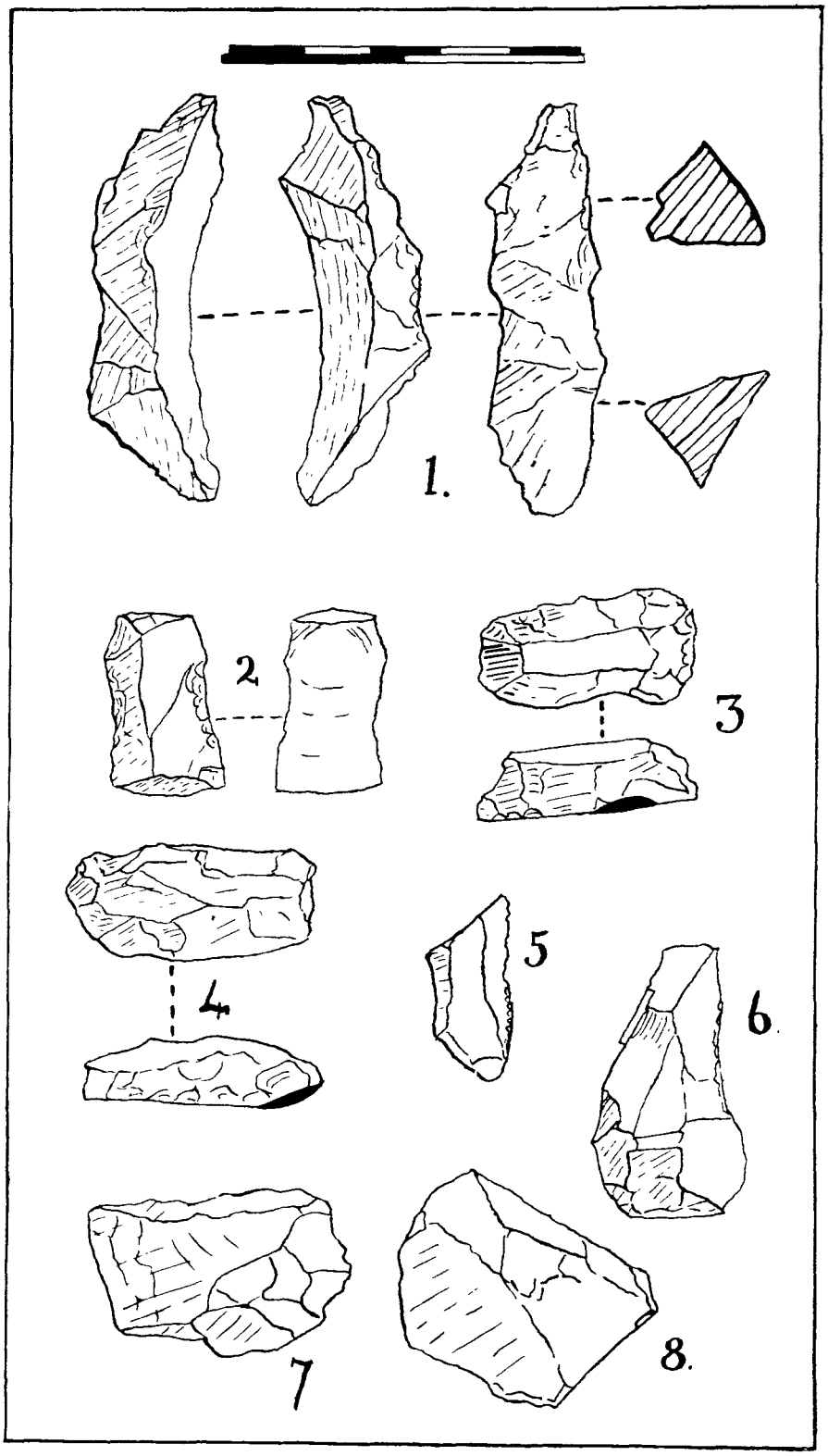


FIG. 2.—1. QUARTER-LEMON OR REDIRECTING FLAKE. 2 AND 4. ROUGH ROD-SCRAPERS, SLUG-LIKE. 3. END-SCRAPER OF TABLE MOUNTAIN SANDSTONE. 5. SLIGHTLY WORKED FLAKE. 6, 7 AND 8. UNWORKED FLAKES.

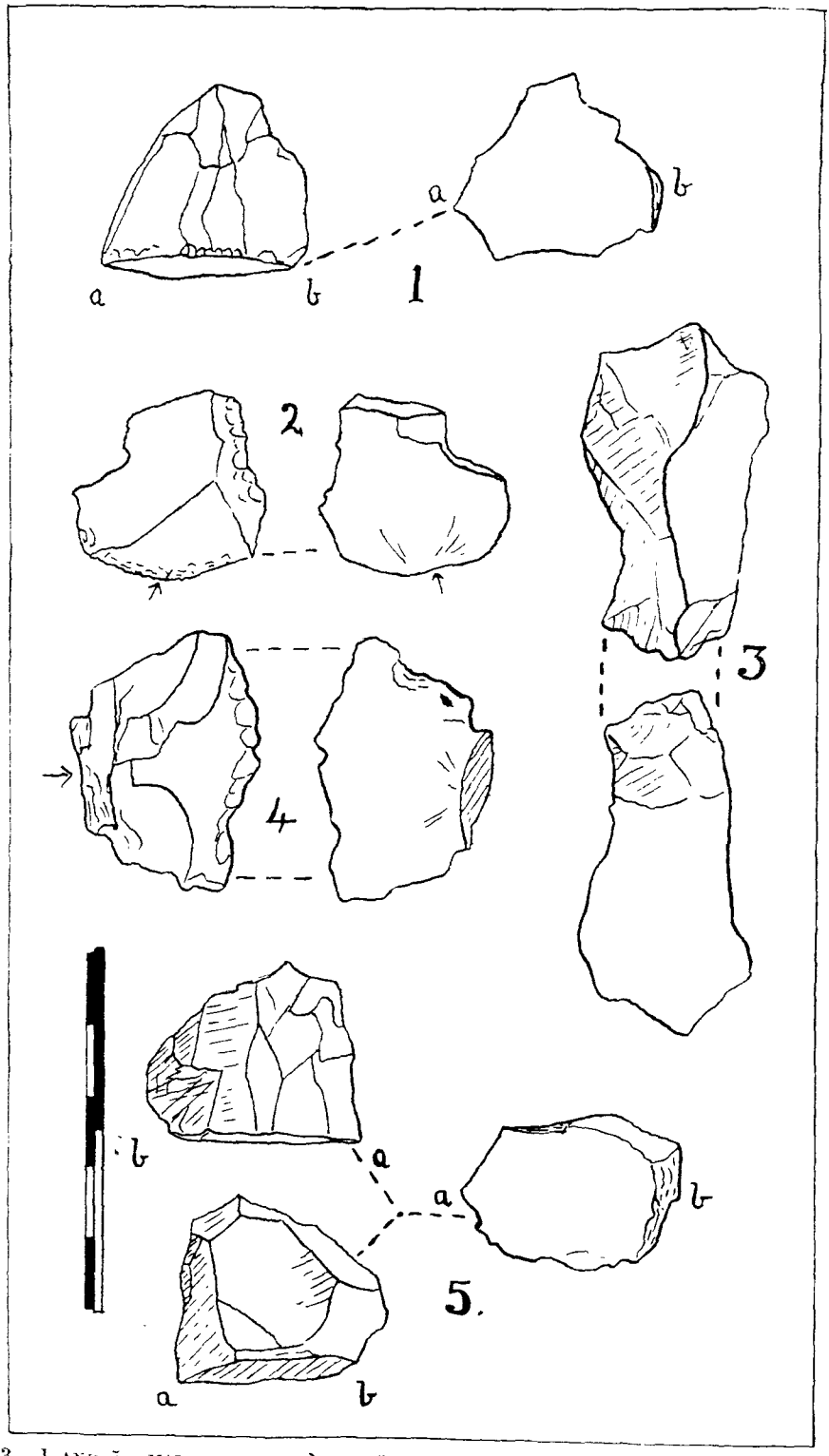


Fig. 3.—1 and 5. small cores. 2 and 3. roughly worked flakes. 4. flake tool similar to still bay type.

Each brick is shaped like an equilateral triangle, though the one side is curved to form part of the circumference of the circle. Each side of the brick is 15 cm. and the thickness is 3·5 cm.

The position of these bricks can be safely determined as some fragments were *in situ*: they seem to have been found within a foot of the surface, covered by white wind-blown sand, towards the northern end of the sand-pit. We must presume that the fragment of eighteenth-century china was found with these bricks.

Conclusions.

Fragmentary portions of two skulls were found: (1) A specimen, which Dr. Drennan has restored, showing Australoid characteristics—strong eyebrow ridges, large teeth and the contour of the frontal bone all being typically Australoid; (2) A second specimen, which could not be restored with any hope of accuracy, and certain other bony fragments show strong affinities to the San (Bush-Hottentot) type.

In view of the peculiarities of the first of these skulls the settling of the question of chronology is of extreme importance, but unluckily we can only surmise the associations of the individual.

If we treat the Stone Age material found at this site as of a single cultural group, we find that individual implements and rejects fall into either the Still Bay Industry of the Middle Stone Age or into the Wilton Industry of the Later Stone Age, thus making a local industry presumably of mixed characteristics. No valid proof of Middle Stone Age technique is available; facetted butts are lacking, convergent flaking is doubtful, while the fine lance-head technique of the Still Bay is missing. On the other hand, a quarter lemon (Fig. 2, No. 1), and a scraper[1] (Fig. 3, No. 4), are both typical of the Still Bay Industry. Much of the material, especially the cores, which are of a microlithic type and imply the loss of a number of small flakes in the process of sieving, are typical of the Wilton Industry. The pebble material points to the presence of a Wilton folk with a strandlooper type of subsistence, but not with certainty. The grooved stones marked with scars, the grindstones, the presence of a fragment of red ochre, and the technique evidenced on some of the implements and rejected flakes are all compatible with the Wilton Industry: but no traces of pottery are to be seen, nor are there evidences of hearths.

A fact of importance must be noted here. On visiting a site some 200 yards north of the site under discussion a year or two ago, I discovered elements of Wilton type, not associated either with Still Bay implements or with skeletal remains. This site was being quarried in a similar way but for a pure white sand to be used in glass-manufacture, which seems to have been identical with the white upper

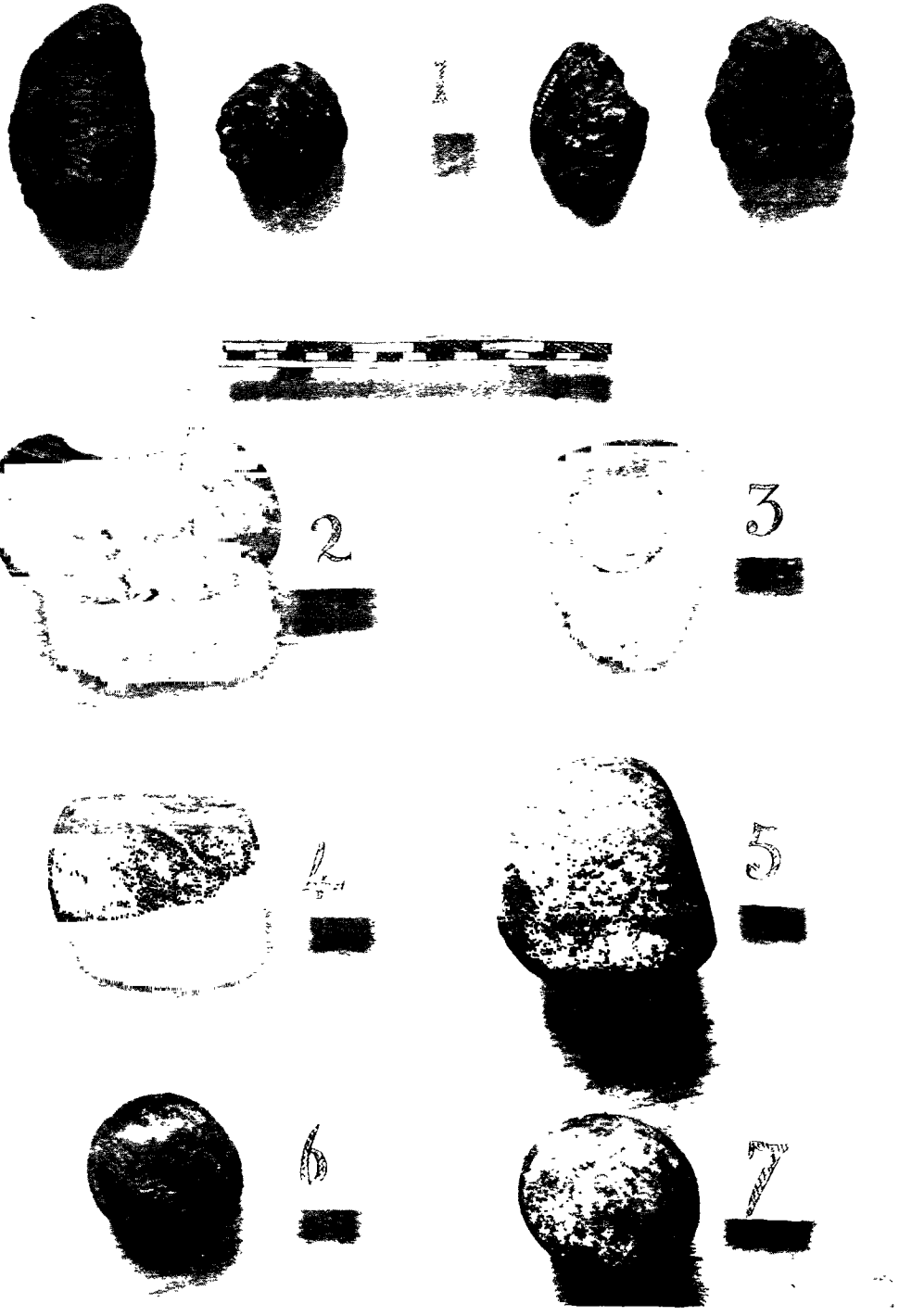
[1] Goodwin, "The Hardy Collection." *South African Journal of Science*, 1926, Fig. 4.

layer of the present site, but at a deeper level. It would seem more than probable that this site was a continuation of a Wilton site which stretched across from one quarry to the other, and that the Still Bay material of the Middle Stone Age forms part of a site not represented in the white sand quarry. As has been shown above, the historic material, the brick and china, seems to belong to a surface stratum and is not likely to be in any way connected with the skeletal finds, though this is possible.

We are left (if we exclude this last possibility) with two cultures and two physical types. We know that at all sites of Wilton type at which skeletal remains have been definitely associated, these are of the San race. If we may presume that the San skull is to be associated with the Wilton material here, then it becomes more probable that we may safely associate the Australoid specimen with the Still Bay implements.

One further difficulty remains: at Skildegat Cave the Messrs. Peers found a skull of high type associated with Still Bay material. It shows no affinities with the Australoid specimen under discussion, but in the facial portion resembles the San type, the cranial portion belying this to some extent.

The drawing of further conclusions is so far impossible: more data will be necessary before we can presume to know Middle Stone Age man with any certainty.



1.—FOUR SPECIMENS OF INCISED OR HATCHED STONES. 2. BROKEN PORTION OF A HALF-PIERCED STONE. 3. COMPLETE BORED STONE. 4. FLAT RUBBING STONE. 5. RUBBER WITH POCKED DEPRESSION IN CENTRE. 6. PECKED HAMMER STONE. 7. RUBBER WITHOUT CENTRAL POCKING.

STONE IMPLEMENTS FOUND WITH THE CAPE FLATS SKULL.

REPORT ON THE BRITISH MUSEUM EXPEDITION TO BRITISH HONDURAS, 1929.

[With Plates XXXV–XLVI.]

By T. A. Joyce.

The objective of the expedition this season was the group of ruins situated between the Pusilhá and Joventud branches of the Mojo River in British Honduras. A preliminary investigation of the area had been made in 1928 by Captain E. L. Gruning, Dr. T. Gann, and Mr. H. Clive-Smith. The result of that investigation was published in the *Journ. Roy. Anthrop. Inst.*, vol. lviii. p. 323.

Our primary objects this year were, to bring back as many of the inscribed stone stelæ as we could transport; to excavate a cave which gave indications of having been used as a pottery-dump; to survey the main site as far as possible; to carry on excavation in the numerous mounds, and to prospect for other ruins in the neighbourhood.

I was accompanied by Captain E. L. Gruning, who undertook supervision of transport; and by Mr. Robert Ashton, who looked after the commissariat. We all shared in the supervision of excavation work, and, though this report appears under my name as editor, a great portion of it is taken from the field-notes contributed by Gruning and Ashton, as will be noted in due course.

Owing to private circumstances, Dr. Gann was unable to give us his co-operation this season.

In the report of last year it is stated that the naming of the site provided difficulties. Though it had first been reported under the name "Pusilhá," it was clear that the main Plaza, with its series of dated stelæ, lay nearer the Joventud River than the Pusilhá. Further, there were rumours of another ruined site, called Pusilhá by the native Maya, on the other side of the Guatemalan border. The survey (still incomplete) of the surrounding district indicates that this Plaza is intimately connected, not only with the ancient bridge over the Pusilhá, but with certain newly discovered masonry complexes, built on a huge scale, on the other side of that river. No ruins were discovered in the direction of the Joventud, and no indication, in spite of careful enquiry, could be obtained of any other ruined complex known by this name. It has been decided, therefore, definitely, to give the name Pusilhá to the whole complex (which obviously straddles the river), being the first name given to the site by native report before actual discovery. The word means "still water," and well describes the river, which consists of a series

of large, deep pools, where the tired and superheated archæologist can obtain a most refreshing swim at the end of the day's work.

The expedition sailed on January 31st, made a quick connection at Jamaica, and arrived in Belize on February 17th. Five days were spent in collecting stores and arranging transport, and we reached Punta Gorda, our "jumping-off" place, on the 23rd. Here we were delayed.

We had decided that, in order to remove the heavy sculptures at the Pusilhá site, a caterpillar tractor, towing a heavy wagon, was the only satisfactory means of transport. The only tractor available was up in the Cayo district, and we had to await its arrival. Meanwhile we investigated certain caves in the neighbourhood of Punta Gorda (without result), and undertook a day's excavation on Wild Cane Cay, a small islet some twenty miles from the coast, the only Cay on which Maya remains have been discovered. The results were not important, but it is clear that the Cay is a very rich archæological site and demands further investigation.

The tractor arrived on March 3rd, and Gruning and I started the next day, with the recruited labourers (mostly Caribs), two mules, and a horse. The wagon was not large enough to take all our supplies and equipment, so we decided to send the surplus by canoe to a certain point on the Mojo River, known as "Flour Camp," the highest point which large canoes can reach, with Ashton in charge. At this bend of the river an old mahogany trail leads to a few abandoned huts. We expected to connect with Ashton on his arrival on the 7th. It was the end of the wet season, and the low ground was swampy; the old trail was completely overgrown and we had to "cut ahead" all the time and make long detours to avoid fallen trees, lay tracks from felled timber in the mud, and spend interminable hours in repairs. Consequently we were late in arriving and Ashton waited alone in the bush for three whole days. (Pls. XXXV and XXXVI.)

We connected on the 10th, and Gruning went back to Belize to get spare parts for the tractor, which by this time was derelict. Ashton and I went on by foot, the mules carrying essential provisions and the local natives carrying necessary equipment. A temporary camp ("Crossing Camp") was made on the Pusilhá bank, near the cave which we decided to investigate pending Gruning's return. This cave proved to be a far larger proposition than we had expected, and the excavation occupied three weeks. Meanwhile we constructed a permanent camp in the main Plaza a mile beyond, and removed thither after Gruning's return on April 12th. The geographical relation of the cave to the main plaza, and to certain burial mounds, which produced important finds, is indicated in Text-fig. 1 (a rough compass-survey).

THE CAVE. (Pl. XXXVII. Fig. 1.)

A plan and section of the cave are shown in Text-fig. 2. It appears to be a natural cavity in a limestone outcrop of some size, on the summit of which was a series of low mounds. Some of these mounds were excavated, but yielded no

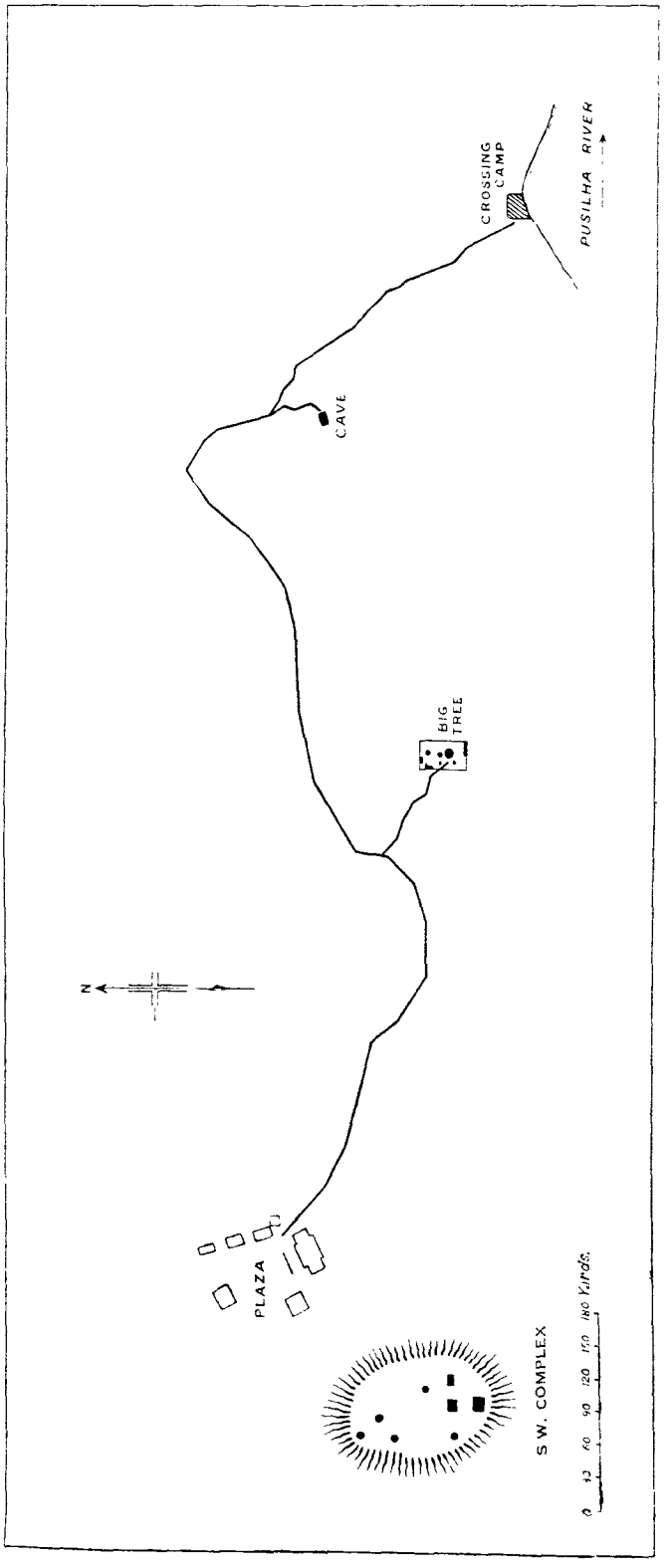


FIG. 1.—COMPASS TRAVERSE, SHOWING THE RELATION BETWEEN CROSSING CAMP, THE CAVE, BIG TREE MOUNDS, THE PLAZA, AND THE S.W. COMPLEX.

results beyond fragments of coarse domestic pottery, and the natural inference is that they were hut-foundations. Entrance to the cave was made laterally from the lower level, but the opening here may be of comparatively late date, and

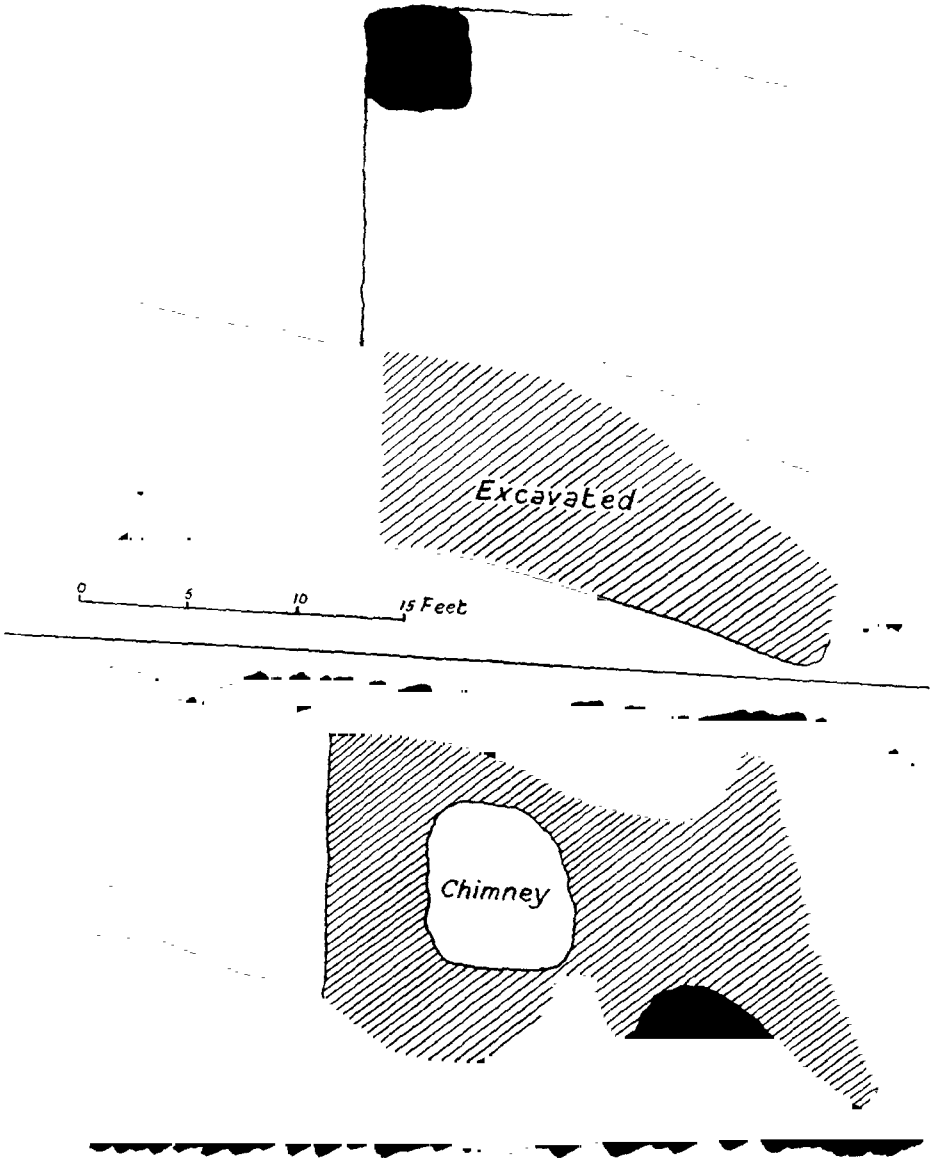


FIG. 2.—PLAN AND SECTION OF CAVE.

produced by the fall of a large tree tearing away the side of the cavern. A kind of "chimney" leads from the cave to the surface of the outcrop, and this upper opening is of some considerable age, because it is partly encircled by the roots of a very old hard-wood tree. It seems probable that this chimney was the original

means of access to the cave, and that the ancient inhabitants of the village, erected on the summit of the outcrop, used this "oubliette" as a convenient dump for broken and discarded pots. As excavation proceeded, and it was possible to obtain a section of some 7 feet, the lines of stratification supported this view. Yet it is quite possible that the cave was also, in a sense, a sacred place, because traces of five burials were found there. However, these burials may be intrusive, in the sense that the interments were made after the breaking away of the side wall of the cavern rendered it more accessible.

The cave measures some 33 feet in length, and, at its widest transverse diameter, 12 feet. Excavation carried down to the rock floor showed that the deposit measured some 10 feet in depth. An experimental shaft of about 3 feet in depth had been sunk in the centre of the cave last season, and a transverse trench had been dug along the back wall. These tentative excavations showed that the cave was very rich in pottery remains, and our programme was to make a thorough investigation.

It seemed possible that some light might be shed on the very obscure question of the development of Maya ceramics, by making careful record of the remains occurring in each stratum; consequently, the contents of at least one-half of the cave were removed in layers of approximately 1 foot 6 inches to 2 feet in depth. Two labourers were employed, one to dig and the other to carry. The digger, working to a prescribed depth, filled wooden petrol-cases with cave-earth mixed with pottery fragments, and the carrier brought these outside the cave where I, often with the assistance of Mr. Ashton, went through the earth with fingers, picking out the various fragments and other objects which seemed to be of archæological importance. As the depth of the excavation increased, steps were left to enable the carrier to bring his load out, and when, finally, these had to be cut away, a bush-ladder was made to enable the carrier to emerge from the excavation. The work therefore became progressively laborious. The soil in the cave was heavy and sticky from the surface to a depth of about 3 feet. Below that it was fairly crumbly, and easier to work and search. Our operations were from time to time hindered by heavy falls of rain, which came down the chimney and reduced the undersoil to the condition of mud. In the afternoons we were often troubled by black hornets, which came, apparently, to drink the drops of water which condensed on the cave walls.

When half the cave had been partially excavated to the depth of about 7 feet, it became apparent that the archæological strata were not horizontal but curvilinear, the richest finds appearing immediately under the chimney. It is evident, therefore, that the greater part of the remains had been thrown down the chimney, forming a mound. Subsequent additions to the heap would therefore add "skins" to the mound; and, in the later stages, a pot dropped through the chimney would break on the apex of the mound, and the fragments would fly to

any quarter of the cave. I have elaborated this point, because it may serve as a warning to other excavators who have to deal with a similar site. Our horizontal stratification record cannot therefore be taken as conclusive evidence of the succession of styles, but only as a rough indication. The shape of the original dump had been entirely obscured by deposits of humus, so that the floor of the cave, before excavation, presented a flat surface. Further disturbance had also been made in the earlier strata by excavation for pre-Spanish graves. The results of excavation as so far investigated may be summarized as follows :—

Pottery.—(Pls. XL–XLV) As implied above, the main bulk of the remains discovered was composed of pottery fragments of great variety. The greater proportion consisted, naturally, of coarse domestic ware, so-called "ollas" and dishes. But there was an unusually high percentage of bowls and tripod plates, painted in slip, and frequently bearing hieroglyphic inscriptions (Pls. XL and XLI). The quality of paste is extremely variable, ranging from a rather thick and friable ware to a very thin, hard, perfectly fired pottery. The slip-decoration comprises two or three shades of red, yellow, orange, and black. Most of the designs are outlined in the last. Occasionally a peculiar grey colour is incorporated in the design, a grey which verges on blue, especially when it is applied in combination with one of the more brilliant reds. This grey slip appears to have been applied to pots already fired, and partially fixed by light secondary firing. Certain fragments, few in number, show the remains of a thick turquoise-blue slip, rather coarse in quality, which, also, was evidently applied to a completed pot and subjected to a secondary firing. This slip, which bears a remarkably close resemblance to the blue slip characteristic of Mexican Toltec ware, is for the most part imperfectly fired, and only survives in patches. In two cases, at least, it has been applied as an all-over covering to a vase of beautifully burnished red ware, and has naturally split away from the highly polished foundation. It is interesting to note that this secondary slip, in a colour (and material) which has usually been associated with the Toltec period of Mexico, appears only in the lower strata of this cave, and seems to have been more or less experimental. There can be no question that the pottery of this cave antedates the Toltec period by centuries, and there is not the slightest indication of Mexican influence throughout the complex.

A chocolate-coloured ware, deepening to black, with incised or impressed ornament, thin walls, and well fired, appeared in small quantities in most of the layers. Incised and "fluted" ware came from the lower strata. Engraved pottery (on which designs had been carved after firing, or, at least, sun-drying) also belonged to the lower strata. A peculiar class of tripod bowl, in well-burnished red ware, very closely resembling Samian pottery, was found throughout.

The depth of the deposit provided six strata, of 1 foot 6 inches to 2 feet each, and these were numbered from 1 to 6 in a downward direction (*see* Diagram below). By far the richest stratum was the 4th, in which examples of practically every style were found. The top stratum, consisting in the main of comparatively recent vegetable humus, was poor in remains apart from coarse domestic pottery. The remains characteristic of the three deepest strata include bowls of rather thick ware, painted with designs in black on yellow. As far as my knowledge goes, this ware has not been found at any other site. Here, too, were found fragments of polychrome ware, many of them well fired, ornamented with series of stepped coils or frets, a design which appears to have gone out of fashion in later times. The same statement is true of the fluted ware. The use of the peculiar grey slip, mentioned above, appears to start in the 4th stratum and to continue until the 2nd, while the turquoise-blue slip, also involving a second firing, belongs to the 4th and 5th. The incised ware, though comparatively scanty, belongs to the 3rd, 4th, and 5th strata, but the rare engraved fragments only to the 4th and 5th.

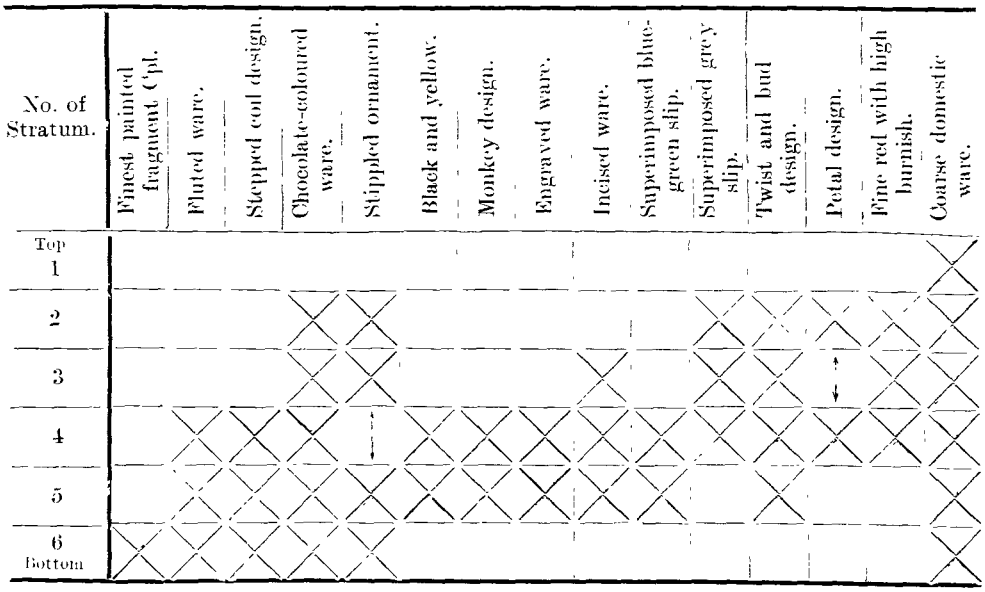


DIAGRAM ILLUSTRATING STRATIFICATION OF POTTERY.

Decorative motives, derived from the vegetable world, have hitherto been regarded as rare in Maya art, but the Pusilhá potters made great use of a design resembling a twisted liana with dependent buds (Pl. XLIII). This design, which lasted from the 5th to the 2nd stratum, is particularly characteristic of the site, and is more frequently met than any other. Another "vegetable" design, of flower-petals, is also found in the 2nd, 3rd and 4th strata (Pl. XLV, *c*, *d*). Associated with these upper strata (2 to 4) is a very interesting class of ware, in which the designs, usually formal, are painted in a singularly brilliant red on a buff ground;

some of this ware is magnificent from a technical point of view. In many cases the paste is marvellously thin and light, perfectly fired, and the slip-decoration is so highly burnished that it gives the illusion of a glazed surface. The rare pale-grey slip appears on vessels of this class, emphasizing details, and some of the vases show a stippled ornament in red, which must have been applied by means of a stiff-bristled brush or its equivalent (Pl. XLIV, *b*).

As regards the animal world, figures of monkeys are shown on fragments from the 4th and 5th strata (Pl. XLV, *e*, *f*), and birds on those from the 4th and 5th (Pl. XLV, *g–l*). A number of fragments of two outstanding bowls were found in the 6th; both appear to be the work of the same artist. In the case of the more perfect, the exterior is covered with an intricate design, including a prancing deer and a great snake beneath a row of finely painted glyphs which encircle the rim. The whole of the interior is covered with a similar pattern, a most unusual feature. The other bowl is similar, but the interior decoration is lacking. Fragments of a few fine beakers, with representations of human figures engaged in the practice of various rites, occurred in 5th. But the finest piece of painting, a single fragment, which in style recalls the art of Palenque, was discovered in the 6th (Pl. XLII, Fig. 5). A number of tiny bowls, of very rough ware, often in the form of birds or animals, were found in the middle strata. These may have been votive offerings, or, more probably, children's toys.

As regards the plates, tripod and plain (with a simple ring foot), the work of assembling has not yet progressed far enough to enable an exact classification to be made. The ware is thicker and coarser than that of the bowls, and the feet, where present, are of the cascabel pattern, hollow, and enclosing a small clay pellet which forms a rattle. The rims are usually surrounded with a band of painted design, based on textile art, or the "twist-and-bud" pattern, often supplemented with a row of glyphs (Pl. XL, Fig. 1, B). The centre is usually occupied by a formal design (often cruciform), but sometimes the figure of an animal, or snake, or human being (Pl. XL, Fig. 1, A). Many of these plates are of considerable dimensions, the largest being 18 inches in diameter.

So far as examined, none of the inscriptions on bowls or plates provide dates, but the pottery remains alone provide important new material for the study of Maya hieroglyphic writing.

Stone.—Apart from fragments of *metates* and *manos* (the tripod slabs and rollers used in grinding maize), stone remains were remarkably few and are represented by only three spear-blades of flaked chert. Obsidian flakes and cores were found in quantities, the flakes constituting a serious menace to the fingers of those engaged in searching the earth.

Bone.—A remarkable bone pendant was discovered in the 2nd stratum (Pl. XL, Fig. 3). This is formed from the ascending ramus of the right mandible of a human lower jaw. The condyles have been filed off and just below the notch a hole has

been pierced for suspension. The exterior surface is covered with relief-carving, the main feature of which is four glyphs arranged in a square. This object which was probably an amulet, is, I believe, unique. Traces of other human bones indicated that probably five burials had been made in the cave, all in the region of the 4th and 5th strata. In one case the head was resting in the half of a finely painted vase of the bright-red-slip type. Every attempt was made to remove these remains, but without success. In most cases nearly all the skeleton had disintegrated, while the rest was of a putty-like consistency, and was rapidly reduced to powder on exposure to the air. Animal bones were found in some quantity, deer, peccary, turtle, the dental plates of fish, and fragments of crabs' claws.

Shell.—Objects of worked shell were rare, and limited to a few beads. The most interesting was a large spiral shell, which had been rubbed down on two sides, so that the remaining portion represents the central longitudinal section. Small river-shells, some pierced for suspension, were found in quantities.

Neighbouring Ruins.

While I was engaged continuously on the cave, Ashton made several excursions across the Pusilhá, and discovered, on the top of a lofty and extremely steep hill rising abruptly from the river, a very interesting masonry complex approached over a series of hill-terraces. The principal feature is a large mound with a very well-built stairway, forming the eastern boundary of a somewhat irregular Plaza. The masonry of this complex is of unusually good quality, as regards the accurate cutting and fitting of blocks, and there seems even to have been an attempt at bonding corners, a feature almost entirely absent from Maya architecture. Ashton cleared enough of this site to enable him to make a rough compass-survey of the main Plaza, and to get a magnificent view over the surrounding country. Numerous caves exist in the neighbourhood, and it is hoped that a thorough exploration will be undertaken next season. I visited the site after Ashton had partially cleared it, but I have nothing to add to his description, which is as follows :—

High Hill Site.—This site is situated on the summit of a ridge which rises abruptly to a height of 700 feet, to the south of the Pusilhá River, almost opposite "Crossing Camp." The ridge runs for about half a mile, roughly north and south, varying in width from 6 yards to 40 yards, and culminating towards the south in a small peak. Natural and artificial mounds are dotted all along the ridge The main architectural complex is erected on the extreme north end of the ridge, immediately overlooking the Pusilhá. This consists of a Plaza (Text-fig. 3), the major axis of which, some 25 yards in length, runs roughly 30° W. of N. The north side of this Plaza is some 20 yards in length, the south side some 40 yards. To the north, east, and west of the Plaza the ground falls away abruptly with the slope of the hill, which is buttressed, where necessary, by terraces of limestone

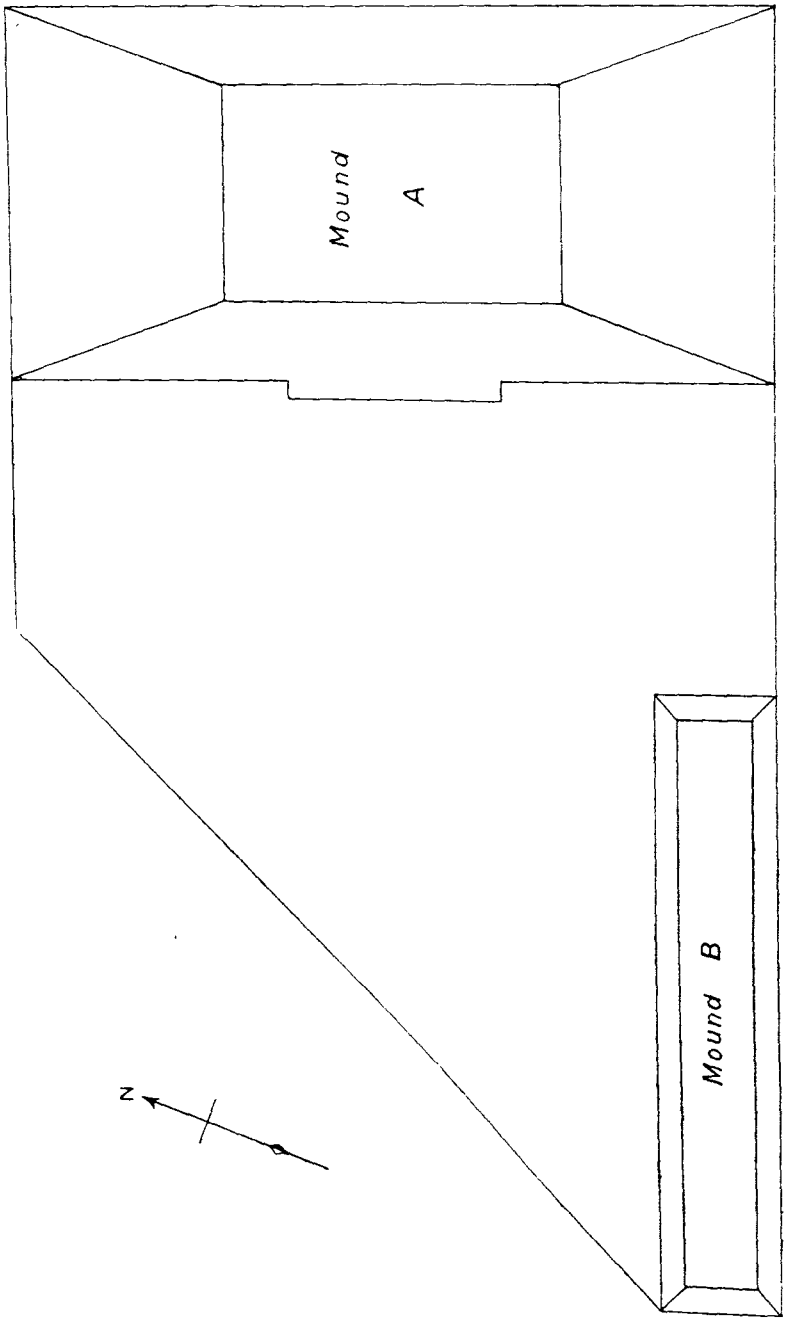


FIG. 3.—PLAZA ON SUMMIT OF HIGH HILL.

blocks. To the south, a broad stairway, flanked by perpendicular walls, leads to a smaller Plaza some 15 feet below.

The eastern side of the upper Plaza is occupied by a large mound (some 75 feet by 30 feet, and 12 feet high), approached from the Plaza by a broad stairway which runs to the top of the mound, which is flat and measures about 33 feet by 21 feet. There is another mound, constructed along the south edge of the Plaza, towards the west, which measures 60 feet by 12 feet, and 4 feet high.

Big Tree Mounds.

Mr. Ashton also undertook the excavation of a small complex of mounds situated around an enormous tree nearly midway between the cave and the main Plaza. These mounds and tree are mentioned in the account of last year's operations (see *Journal*, vol. lviii, p. 339). One of the mounds, which bore three smaller mounds, was excavated by Dr. Gann in 1928, and a number of interesting specimens discovered there, including a remarkable limestone mask. These are described in the report above mentioned. Ashton made a compass-survey of the site, and excavated the remaining mounds. In the course of his investigations he came across two "mirrors" each found in a separate grave, and each consisting of a circular disc of slate which had been encrusted on one surface with a mosaic composed of thin polygonal slabs of iron pyrites, highly polished (Pl. XLVI, Figs. 1 and 2). These objects had evidently been smashed when they were deposited in the graves, but sufficient fragments were recovered to render reconstruction possible. From the technical point of view these two specimens are masterpieces. The accuracy of the jointing of the mosaic, and the evenness and high polish of the surface, constitute a triumph over a very refractory material on the part of an artizan who had no metal tools. Examination of the slate backgrounds shows that each has been pierced with two holes, close together, in the centre. The holes are conical, and it is clear that they were bored from the side on which the mosaic was eventually laid. In each case they are connected by a deep channel, also on the mosaic side, and the inference is that they served for the attachment of a string loop, a portion of which would thus be countersunk beneath the mosaic. Smaller mirrors of polished nodules of pyrites were used in Mexico in Aztec times, and also in Peru in the Inca period. But I think no mirrors of pyrites mosaic, or of pyrites at all, have previously been discovered in an Early Maya site. Whether these specimens were actually used as looking-glasses, or merely as ceremonial breast-ornaments, may be doubtful, but there is no doubt that the accurate fitting of the mosaic plates, and their highly polished surface, would qualify them for the former purpose. Two or three small polygonal plates of pyrites, exactly similar to the mosaic elements of these mirrors, were discovered at Lubaantun in 1927, but no explanation of their use could then be suggested, especially as no fragment of a slate-backing was recovered. Moreover, the oxidation produced by long burial had stained the surface a deep brown, and

they were not recognized as pyrites until an examination of the specimens obtained this season (kindly undertaken by Dr. Thomas of the Museum of Practical Geology) revealed the identity of the material. Mr. Ashton's report of the operations here is as follows :—

Big Tree Mounds (*see* Text-fig. 4).—This complex is rectangular in shape, about 150 feet long by 90 feet wide, with an artificial floor composed of limestone blocks. Upon this artificial surface have been erected several mounds of irregular size and shape.

The largest (A in the Plan) is approximately 50 feet by 15 feet and 6 feet high. B is circular, about 20 feet in diameter and 6 feet high. C is smaller, but of the same shape. D and E are low rectangular mounds, E showing traces of terracing. F and G are small excrescences, barely rising above the level of the humus. The whole complex is dominated by a giant silk-cottonwood tree, the branches of which still spread over the area of the site, though the crown has been blown off some 40 feet up.

Immediately to the south, separated by a small natural gully, is a mound, also apparently a natural feature in the main, on which are three small burial mounds which were excavated by Gann in 1928. Results of excavation this year were as follows :—

Mound A.—Two burials were found, one in the north-east and one in the centre. The bodies were contracted, head to east, at a depth of 3 feet to 4 feet, covered by slabs.

In the north-east burial were found—

A small jadeite mask, the left eye of which was formed by a small movable jadeite sphere let into the mask (perhaps the cavity was a natural flaw). (Pl. XLII, Fig. 2.)

A jadeite bead.

A mosaic pyrites mirror.

Fragments of coarse pottery.

In the central burial the finds were—

Fragments of a pottery *incensario*.

Two obsidian flakes.

Head of a pottery figurine.

Fragments of coarse pottery.

Mound B.—A burial was found in the centre of the mound at a depth of about 2 feet. Associated finds were—

Jadeite pendant with human figure in relief (Pl. XLII, Fig. 1).

Pair of jadeite ear-ornaments.

One jadeite bead.

Mirror of pyrites mosaic.

Fragments of coarse pottery and obsidian.

Mounds C, E, and G.—Sections were dug through these without result.

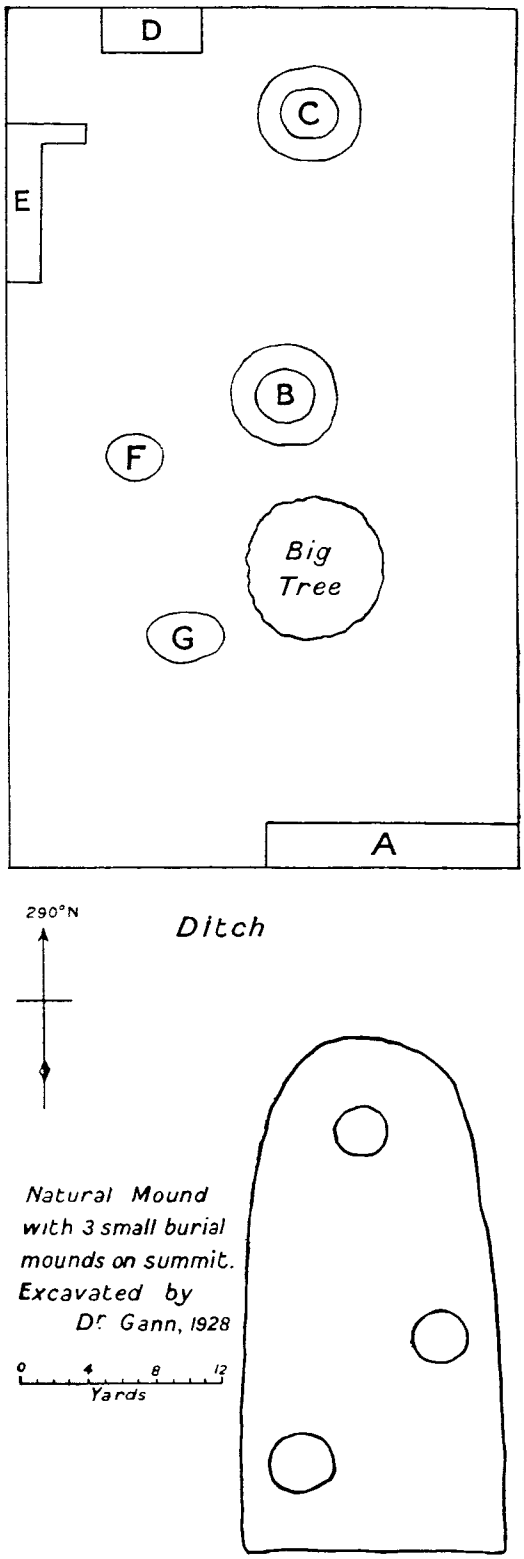


FIG. 4.—BIG TREE MOUNDS.

The Main Plaza. (Pl. XXXVI. Fig. 2: Pl. XXXVIII. and Text-fig. 5.)

On April 12th, after Gruning's return with spare parts for the tractor, we all moved up to the permanent camp in the main Plaza. Four of the stelæ were selected for transport, and Gruning immediately set about the arduous task of trimming them down, in order to discard every available pound of unnecessary weight.

The stelæ at this site were originally, in most cases, carved with a dated hieroglyphic inscription on one side and a human figure in ceremonial dress on the other. All had fallen, and most were broken. The carving on the upper surface had in every case weathered away, though in a few instances very faint traces of carving remained. The under surfaces were fairly well preserved. In every case but two, one a mere fragment, the stelæ had fallen with the inscription side downwards. The stelæ chosen for removal were C (showing a complete human figure), D, E, and Y (inscriptions). Paper moulds had been made of these last season, and the plaster casts taken from the moulds are illustrated in the *Journ. Roy. Anthrop. Inst.*, vol. lviii. Pls. XXVI, XXVII, XXX, XXXVI, and XXXVII (Fig. 1). All the stelæ are carved from limestone, some of it so hard that it almost approximates to marble (a fact which led Dr. Gann to describe one or two as sandstone in last season's report). But this limestone, though hard, presents a definite cleavage, which assisted the work of trimming. The uninscribed bases (originally imbedded in the ground) were first taken off: then followed the delicate process of thinning down the slabs, *i.e.* removing the obliterated surface along the lines of fracture. For this purpose, iron wedges were freely employed, and the process of splitting, in obstinate cases, was assisted by means of a low fire built against the defaced side. In no instance was a single fragment removed which bore a trace of decipherable carving. To complete the story of the stelæ, our experience of the tractor and wagon on the upward journey had made it plain that we should be lucky to get even one load down to the coast, and we dared not risk two. So, after we had earmarked the larger and more important fragments for road-transport, Gruning, with my full authority, deliberately broke up the rest into convenient mule-loads, (Pl. XXXVI. Fig. 2), and they were packed, by relays, fourteen miles to "Flour Camp," whence they were taken by canoe to Punta Gorda. This may appear, on the surface, an act of vandalism, and that is why I assume the responsibility. As a matter of fact, an intentional "break," *properly carried out*, does not the slightest damage, archæological or artistic, to the specimen. In the present case, Gruning's "breaking" was a masterly piece of work, and, owing to this fact and also to the excellent packing and crating of the fragments (for which I have to thank the Belize Estate and Produce Co.), these have reached London with edges perfectly intact: so that the masons at the British Museum have been enabled to reassemble them with such accuracy that the lines of intentional fracture are invisible. I have dealt rather at length with this matter of intentional breakage, because it is a

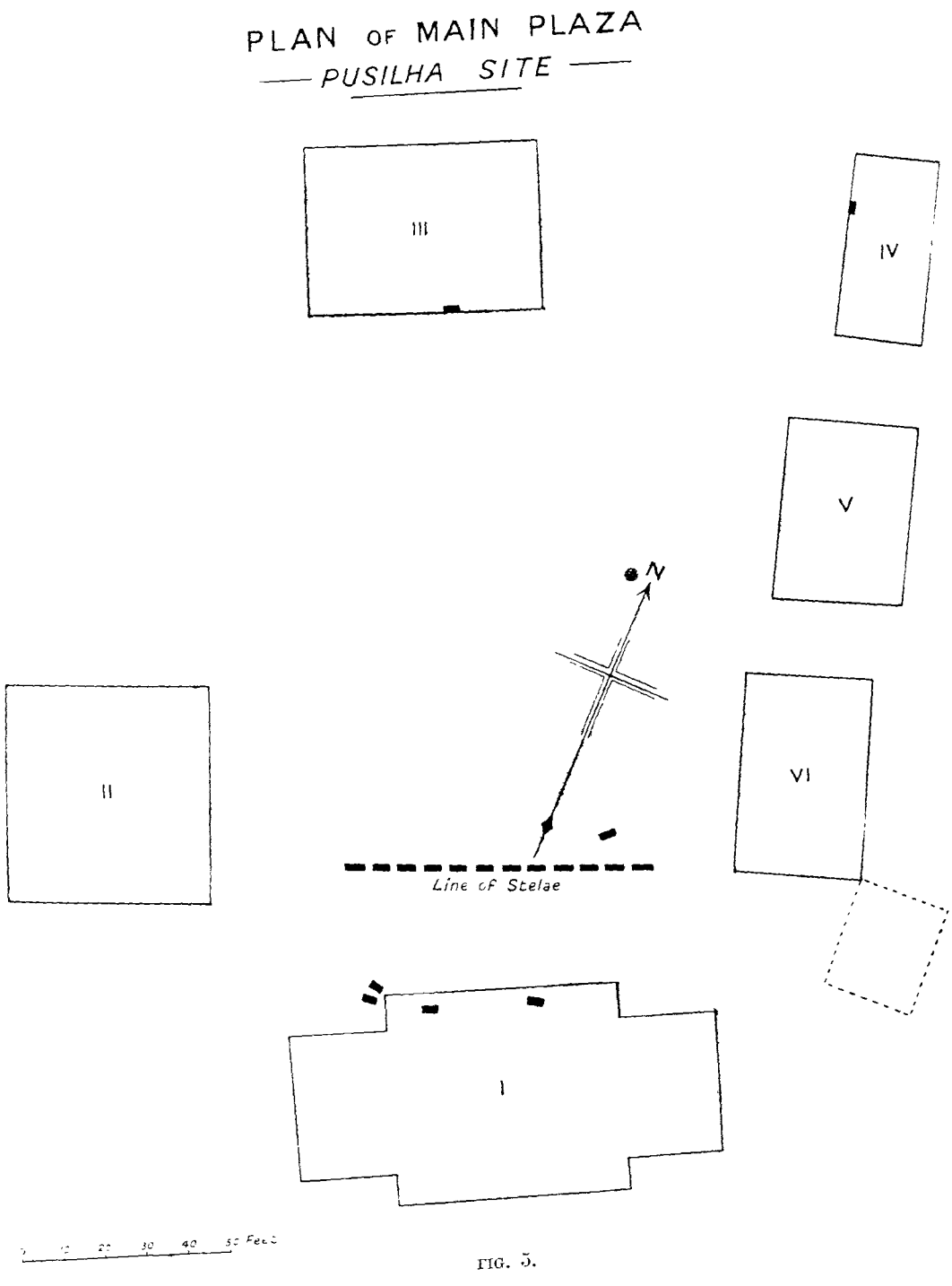

PLAN OF MAIN PLAZA
— PUSILHA SITE —
III
IV
V
VI
II
I
N
Line of Stelae
0 10 20 30 40 50 Feet

FIG. 5.

question which inevitably must, from time to time, confront the field archæologist, and it is a question which concerns pottery quite as much as stone. As regards pottery, it is better, sometimes, deliberately to break an awkward fragment in order to prevent accidental breakage during transport. Accidental breakage almost always produces a loss of "edge," and this hampers restoration; but intentional breakage is a matter of emergency, and, most emphatically, should only be undertaken by experts who are conversant, not only with the archæological value of the specimen which they are handling, but with the nature of the material with which they have to deal.

Even in their trimmed condition, the larger slabs weighed many hundredweight, and the problem of loading them on the wagon arose. The method employed is perhaps worth while recording, because it is very simple, and may give a hint to other field-workers similarly situated. The wagon was brought up alongside the slab and two lengths of palm-trunk (preferably soft wood) were leant up against it. A block was fastened to a convenient tree, and a wire rope was passed through the block: one end was fastened to the stone (carefully padded with wood), and the other was fastened to the tractor. The tractor went off at slow speed, and the slab slid easily up the inclined poles on to the deck of the wagon, where a thick bed of cohune leaves had been prepared for its reception (Pl. XXXVIII, Fig. 2). In parenthesis, I may add that the bad behaviour of the tractor on the upward journey was fully condoned by its usefulness in camp. Bush has to be cut to clear a site, and this often involves the felling of large trees. A tall tree when felled provides an encumbrance which is very difficult to remove. The "burning-off" of a new site may occupy some three weeks. The alternative is heavy axe-work, to cut the trunks into sections which may be handled by man-power. Even a small caterpillar tractor will tow a felled tree of considerable dimensions clear of the area, which is being deforested, in a very short time. The return journey of the tractor with the sculptures was made without a hitch, because the road had already been cut, and, since it was then the end of the dry season, the track had hardened. But it is quite clear that nothing smaller than a five-tonner can cope with the conditions prevailing at the end of the wet season, when an expedition has to make the inland journey. This last section is hardly "Anthropological," but it is perhaps worth recording as a "means to the end."

The other stelæ, of which casts were obtained in 1928, will, it is hoped, be removed next season. One, stela U (described in the *Journal*, vol. lviii, p. 338), was moulded, and a satisfactory cast has been prepared in the British Museum; but a correction is necessary (Pl. XXXIX). Dr. Gann's preliminary observation indicated that the stela consisted of two fragments. Later intensive study shows that it must have broken into three portions, of which one is still undiscovered. The base of this stela is fairly well preserved, but the fragment of the upper portion is badly weathered, and it is not easy to distinguish the glyphs. The fractured lateral edge

of this portion corresponds roughly with the fractured upper edge of the base. The real fitting is at right angles on the left-hand side. This means that the portion which should show the initial date (or its commencement) is missing, and Dr. Gann's observation (which was only provisional, being the result of a short survey) was quite naturally obscured by the fact that the fragments were wrongly assembled.[1]

The rest of the work performed in the Plaza consisted of a plane-table survey (Text-fig. 5) and a few experimental excavations in and about the enclosing mounds. These excavations, owing to lack of time, were incomplete, and produced no results worthy of record. Such results as were obtained are reserved for the report which it is hoped will be issued next season.

South-west of the Plaza we found a large complex of mounds, the plan of which, prepared by Gruning, is shown in Text-fig. 6. A few tentative excavations in these produced no result, but further investigations are needed.

East of the Plaza, in the bush, a number of mounds have been located. A few of these were excavated by Gruning and Ashton, but, though stone-lined graves were discovered, the associated remains were of no great importance. Nevertheless this area affords promise for further research.

An investigation of the "bridge-heads," reported last year (see *Journ. Roy. Anthrop. Inst.*, vol. lviii. p. 342) fully confirms the original suggestion that we have in this region the first indications of a pre-Columbian river-bridge, with spill-ways provided to counteract the pressure of flood-water (Pl. XL. Fig. 2). A rough planning of the region suggests that this bridge provided access from High Hill, in a direct northerly line, to the main Plaza. The relation of the new sites south of the Pusilhá River, *via* the bridge-heads, to the main Plaza is earmarked for next season. It is quite possible that in this area we have the greatest Maya complex attached to a ceremonial centre yet discovered.

Apart from a compass-traverse of our bush-cut tractor route (undertaken with the intention of bringing "Crossing-Camp," the cave, Big Tree mounds, and the Plaza into relation), the survey of the Plaza, and also the preparation of a paper "squeeze" of Stela U., I. personally, was occupied mainly with the packing of the pottery fragments recovered from the cave. I made one visit to the bridge-head with Ashton and Gruning, but all other investigations were conducted by the two gentlemen named, whose reports are incorporated in this summary.

I should like to insert a remark on the importance of packing. The question of cases is easy, because petrol-boxes and provision-boxes provide units which are easily handled. A difficulty arises regarding lids. All wood must be carefully

[1] Mr. Richard C. E. Long has kindly furnished a commentary on this inscription, which I add as an appendix. My own study of the inscription—as far as it went—agrees with Mr. Long's. But Mr. Long's is fuller and more detailed than mine, so, with his permission, I incorporate it in full at the end of this report.

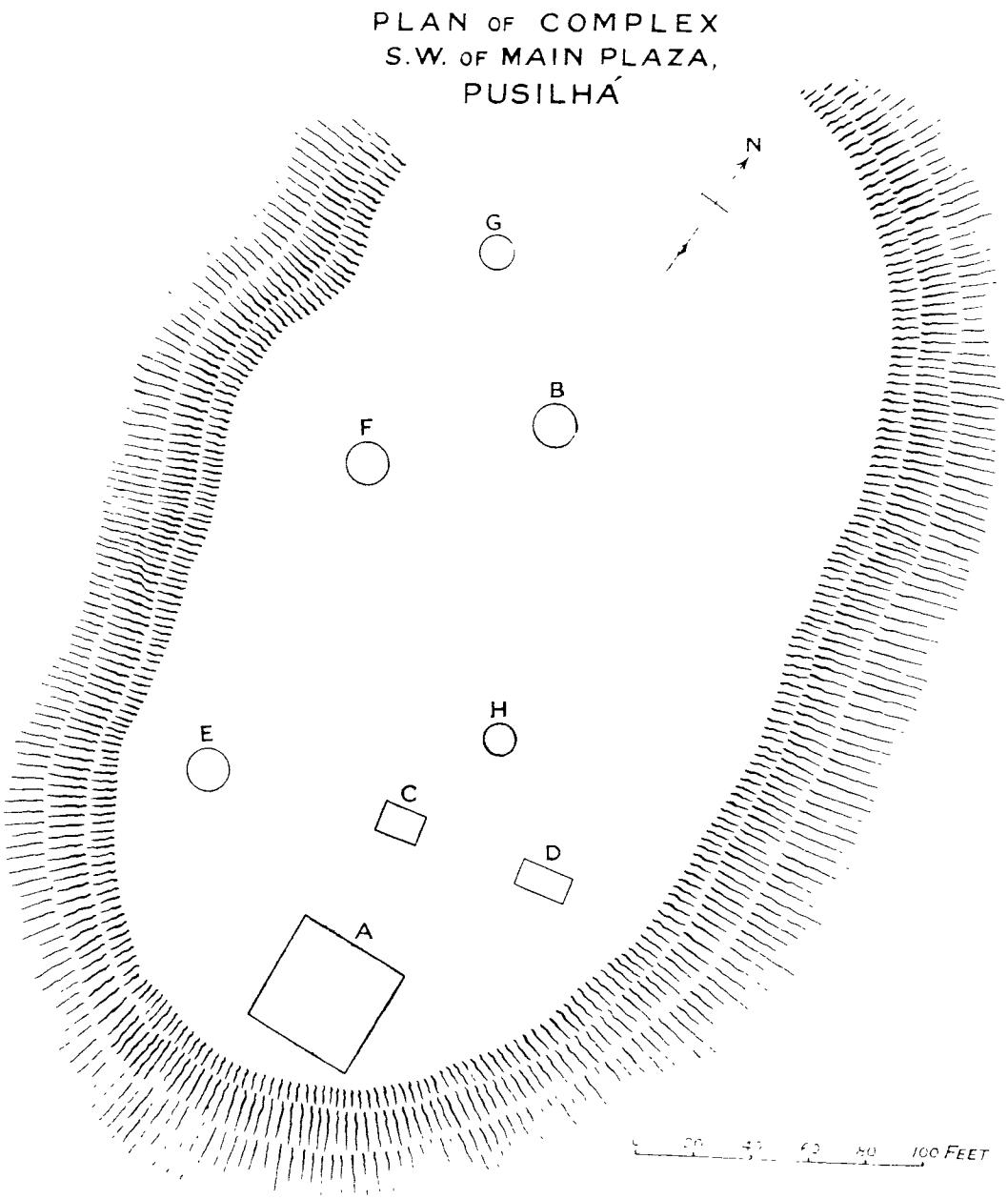


FIG. 6.

earmarked, because natives have a *penchant* for case-lids as fuel. One is often faced with a plethora of cases but no "lidding" material. Packing, where pottery is concerned, depends on paper. Paper is the only secure padding. Newspapers, relayed out from kind friends at home, not only provide a great solace to bush-workers, but perform a far more important function as packing material. When paper ran short, I had, at intervals, to resort to banana leaves and cohune trash. The paper-packed specimens arrived intact; the only breakages occurred amongst specimens packed with bush-material.

One other point. Expeditions in this country are based, economically, on tinned food. It is most useful to preserve a certain percentage of empty tins. These, washed and dried, are of great utility as receptacles for smaller fragments—pottery and so forth. They can be arranged to fit tightly in a case, and constitute a series of units, which, in case of any violent shock, preserve their content within a very limited space. Further, a breakage occurring within the limits of an enclosed tin, does not give that little additional "play" which may lead to the wholesale smash of the contents of a loosely packed case. Method in archæological investigation must necessarily conform to the environment. My experience in this particular field has enforced upon me the importance, primarily, of paper (especially newspaper) as packing material, the preservation of box-lids and of tins.

This account appears under my name. But I wish, again, to emphasize the fact that it is a compilation, based to a great extent on the independent work performed by Captain Gruning and Mr. Ashton, whose whole-hearted co-operation made our expedition a success.

Appendix.

Note on the Inscription on Stela C at Pusilhá.

[With Plate XXXIX.]

By Richard C. E. Long, B.A.

The following is based on Capt. Joyce's rearrangement of the two parts of the stela, and the position of the glyphs is indicated by taking the same reference columns through both parts as if in one. Therefore, glyph-blocks A. 1 to A. 4, inclusive, are missing, and the inscription on the upper fragment begins with B. 1, while that on the lower one begins with A. 5. Dates in the Christian era are given in the Gregorian calendar, and the correlation adopted is that of Mr. J. E. S. Thompson.[1]

Apparently the inscription commences with an Initial Series, but two irregularities should be noticed. (1) According to the usual practice the Intro-

[1] The correlation observed in the *British Museum Guide to the Maudslay Collection of Maya Sculptures* is that of Bowditch, which places the Maya dates 530 years earlier.

ducing Glyph should occupy A. 1. A. 2. B. 1. B. 2. Of these, A. 1 and A. 2 are missing, but the illegible remains of B. 1 and B. 2 do not show any resemblance to the Introducing Glyph. (2) The Supplementary Series, as will appear hereafter, is extremely irregular, but still there are sufficient of the usual glyphs to show that it is a Supplementary Series.

The cycle sign would have occurred in A. 3, which is missing, but may safely be taken to be 9 cycles, as the style of the inscription shows that it does not date from Cycle 8 or Cycle 10. The Katun number in B. 3 (left) appears to be zero and the Katun head is in the right half of B. 3. It is a human head and therefore somewhat unlike the usual bird-like Katun head. The Tun sign would have been in A. 4, which is missing. The Uinal sign appears in B. 4, but its number is broken away. The Kin sign is in A. 5 and the number seems to be 2. This is the crucial point in interpreting the inscription and I was at first inclined to take it as 7. The two dots seem clear, but after careful examination of the photograph I think that what looks like a bar is not so, but is part of the Kin sign. It will be noticed that it curves in the middle so that it seems a sort of forked ornament coming out of the mouth of the face. If the Kin number is 2 then the day must be Ik. B. 5 (left) is the thumb sign for one, and B. 5 (right) is apparently a day sign. This is the weakest part of the reading, as it should have a cartouche round it if a day sign, and I cannot say that there is, unless the upper part is the day sign. A. 6 is 0 Tzec, the "spectacle glyph" for the zero day of a month, and the month Tzec being plain. Collecting the above we have: (9)–0–?–?–2. 1 (Ik) 0 Tzec. This can only occur at: 9–0–2–11–2 1 Ik 0 Tzec 9th July, 438 A.D.

The Supplementary Series is full of difficulties. So far as it remains it is in B. 6, A. 7, B. 7, A. 8, B. 8. At once one notices that A. 7 is glyph B. of the Supplementary Series. It is exactly similar to the usual form but occurs in the wrong place, as it should follow glyph C. and precede glyph A. I do not understand what B. 7 is. It cannot be glyph C. as it has the number 9, and in any case it is unlike the usual form. Nor do I understand B. 8. A. 8 has the form of the moon sign found in glyphs A. and E., but it wants the added number 9 or 10 which glyph A. should have. B. 6 (right) appears to be glyph D. Similar forms occur on the Temple of the Cross, Palenque, and on Stela N., Copan. The number in B. 6 (left) is the usual form of zero, although there seems to be no other occurrence of it in a Supplementary Series. If, as in the present case, there is no glyph E., and the number of glyph D. is zero, it means that no days have elapsed since new moon, therefore the date is that of a new moon. Dr. J. E. Teeple ("Maya Inscriptions, Glyphs C, D, and E, of the Supplementary Series," in *American Anthropologist*, 1925) gives five instances where the Supplementary Series indicates a new moon. One is at La Honradez, where glyph D. is practically erased, but it was preceded by another erased glyph which seems to have denoted its number, zero. At Quirigua, Stela F. has a very unusual form of glyph D. and an unknown glyph preceding it



FIG. 1.—A CRASH ON A STEEP BANK.



FIG. 2.—THE TRACTOR IN DIFFICULTIES.

BRITISH MUSEUM EXPEDITION TO BRITISH HONDURAS, 1929.



FIG. 1.—NEGOTIATING A RIVER BANK.



FIG. 2.—LOADING MULES IN CAMP ; PYRAMID I IN BACKGROUND, MAIN PLAZA.

BRITISH MUSEUM EXPEDITION TO BRITISH HONDURAS, 1929.

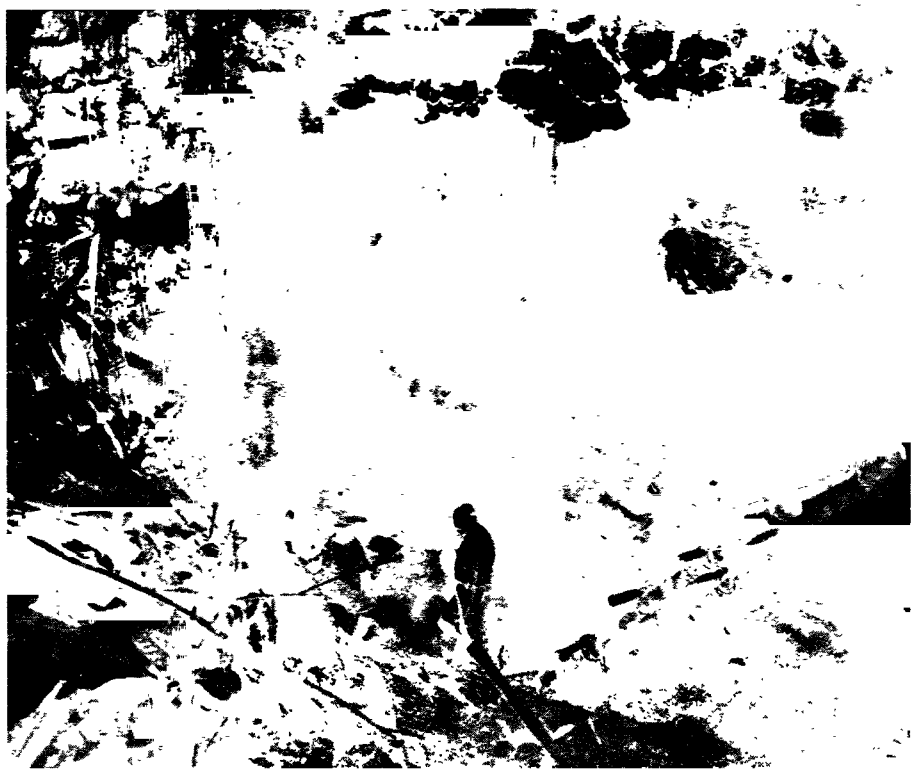


FIG. 1.—THE CAVE WHERE THE POTTERY WAS FOUND.



FIG. 2.—TYPICAL GRAVE WITH ROOF-SLABS IN THE HEART OF A MOUND IN BUSH EAST OF THE MAIN PLAZA.



FIG. 1.—VIEW OF THE MAIN PLAZA FROM PYRAMID I.

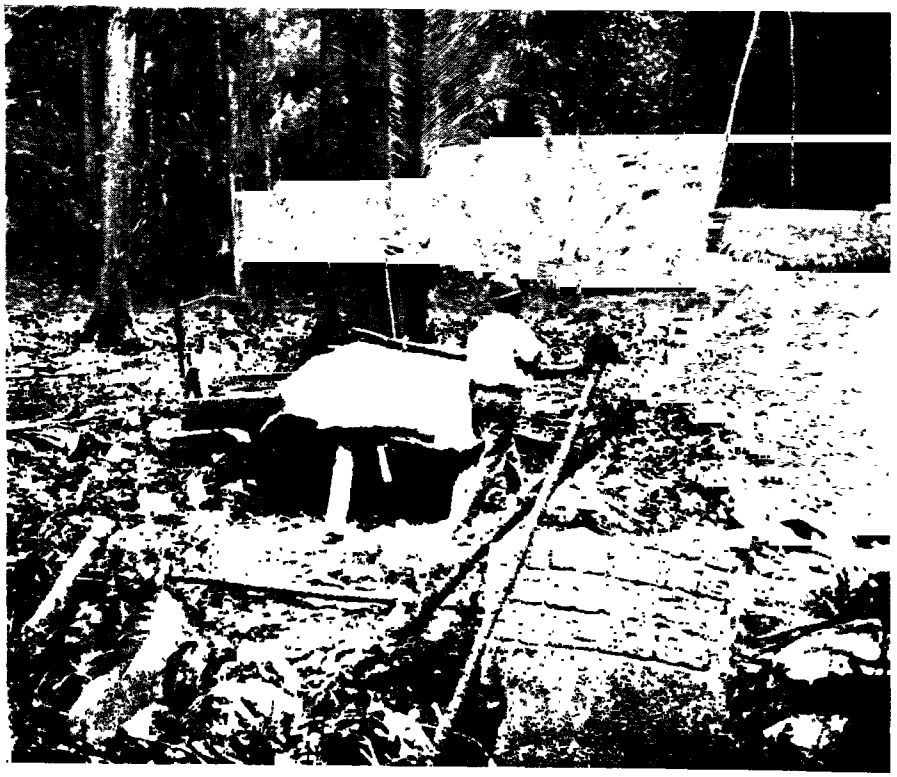


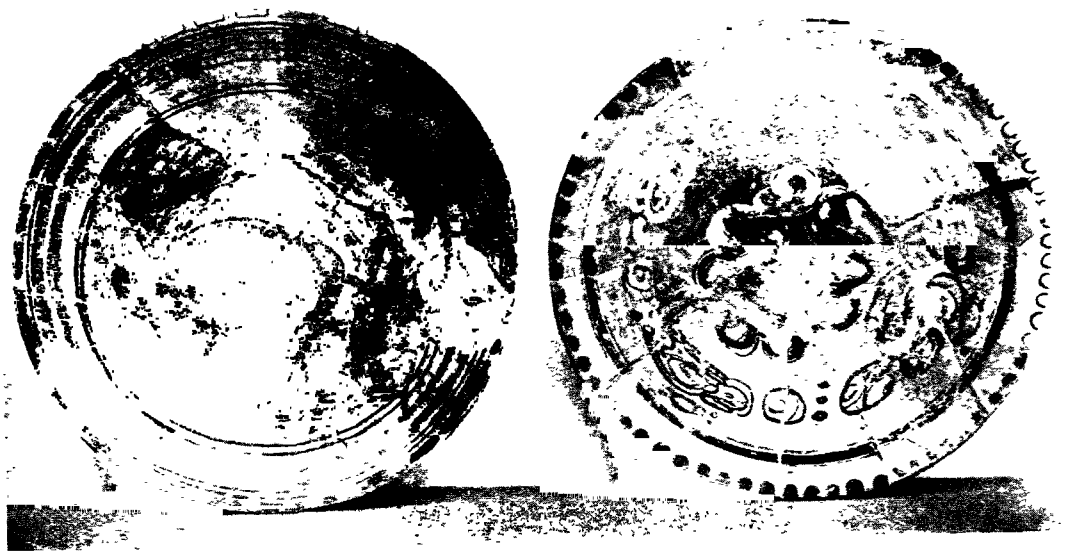
FIG. 2.—HAULING A STELA ON THE WAGON FOR TRANSPORT.

BRITISH MUSEUM EXPEDITION TO BRITISH HONDURAS, 1929.



CAST OF STELA C, PUSILHÁ.

BRITISH MUSEUM EXPEDITION TO BRITISH HONDURAS, 1929.



A FIG. 1. B

FIG. 1.—A. TRIPOD BOWL FROM 5TH STRATUM (DIAM. 14·2 IN.); B. TRIPOD BOWL FROM 2ND STRATUM (DIAM. 14·2 IN.)



FIG. 2.—MASONRY OF BRIDGE ABUTMENT ON NORTH BANK OF PUSILHÁ RIVER.

BRITISH MUSEUM EXPEDITION TO BRITISH HONDURAS, 1929.

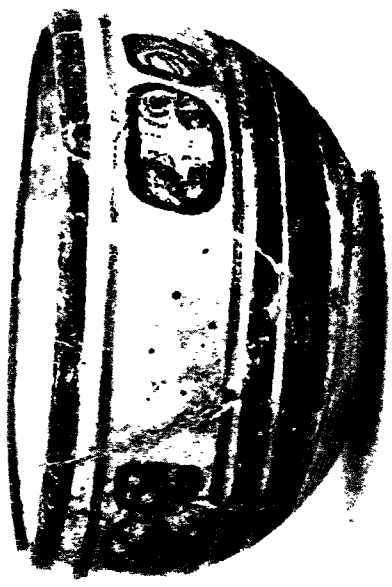


FIG. 1. A (1/3)

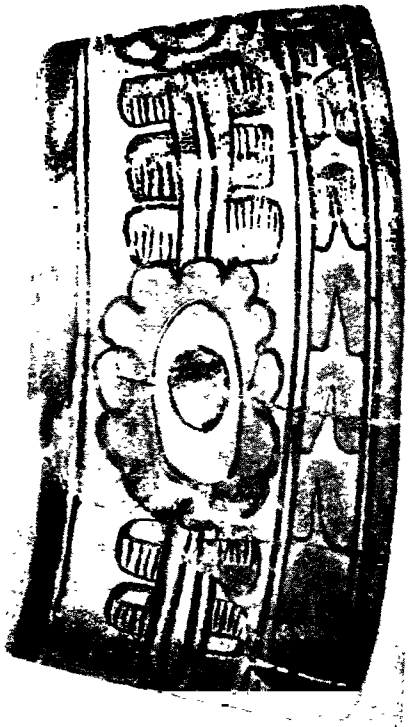


FIG. 1. B (1/3)

FIG. 1. BOWLS: A FROM 4TH, B FROM 2ND STRATUM.

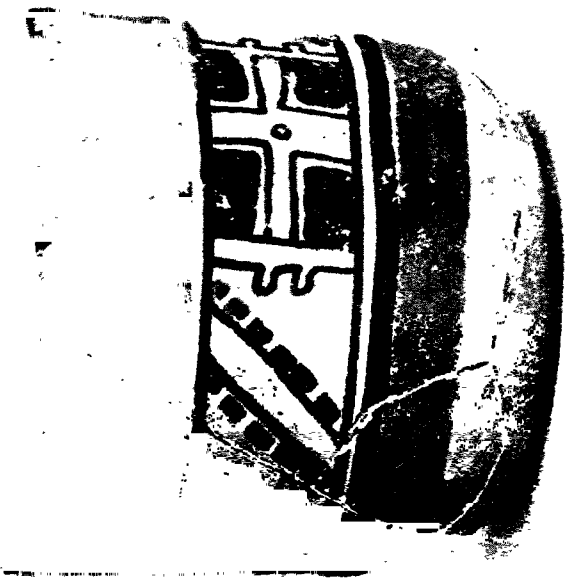


FIG. 2. A AND B, VASES FROM 4TH STRATUM. (1/3)

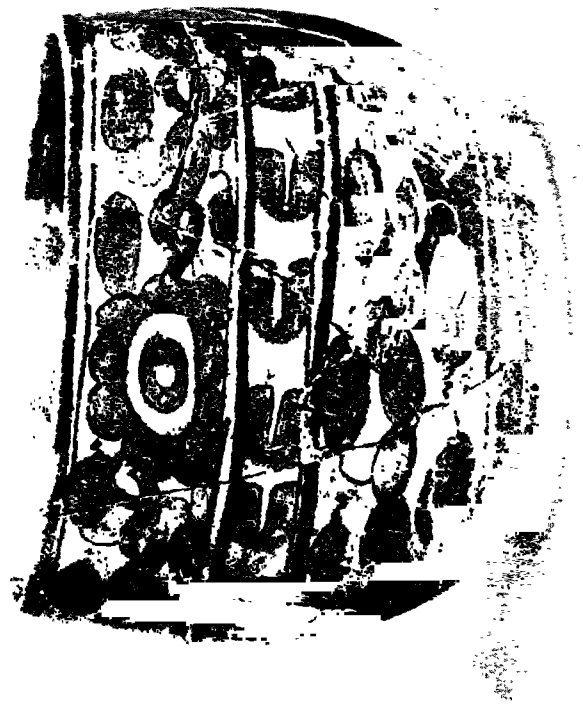


FIG. 2. A

FIG. 2. B FROM 2ND STRATUM.

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FIG. 3. PENDANT CUT FROM A HUMAN JAW-BONE AND INSCRIBED WITH GLYPHS. (NAT. SIZE.)

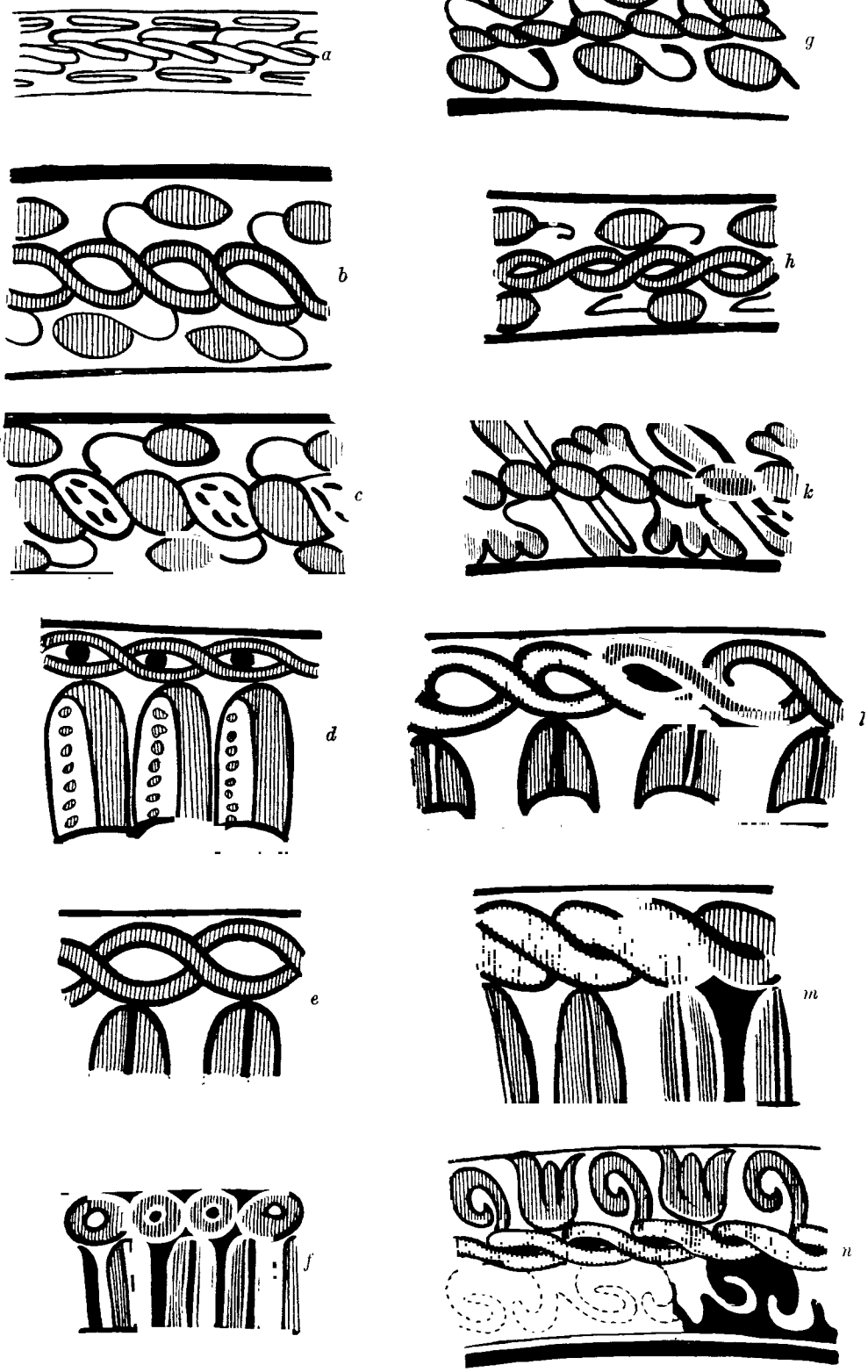
FIG. 5. SPECIMEN OF FINELY PAINTED POTTERY.

FIG. 2. MINIATURE MASK OF JADEITE, WITH INSET EYE. (NAT. SIZE.)

FIG. 1. JADEITE PENDANT. (NAT. SIZE.)

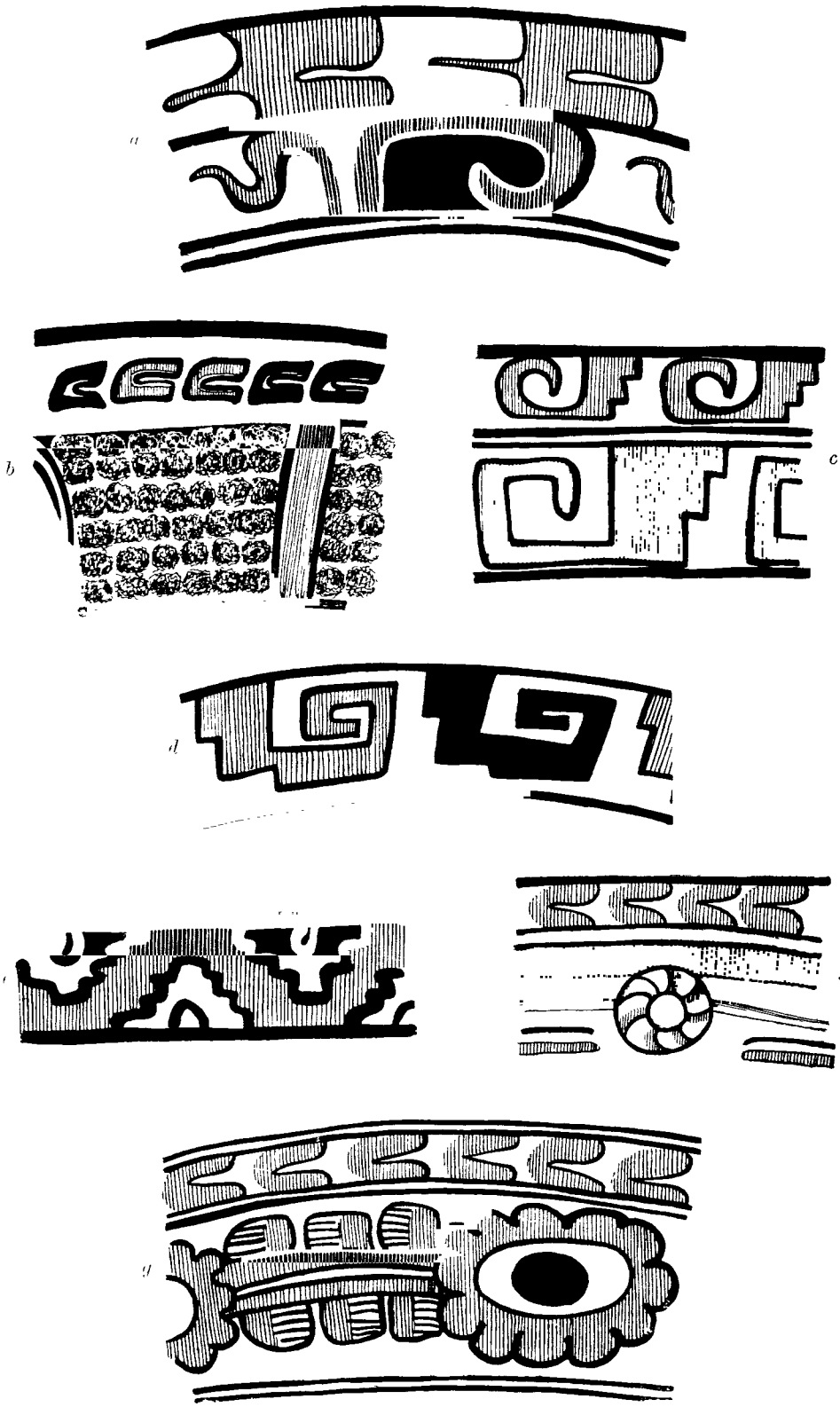
FIG. 4. SPECIMEN OF FINELY PAINTED POTTERY.

BRITISH MUSEUM EXPEDITION TO BRITISH HONDURAS, 1929.

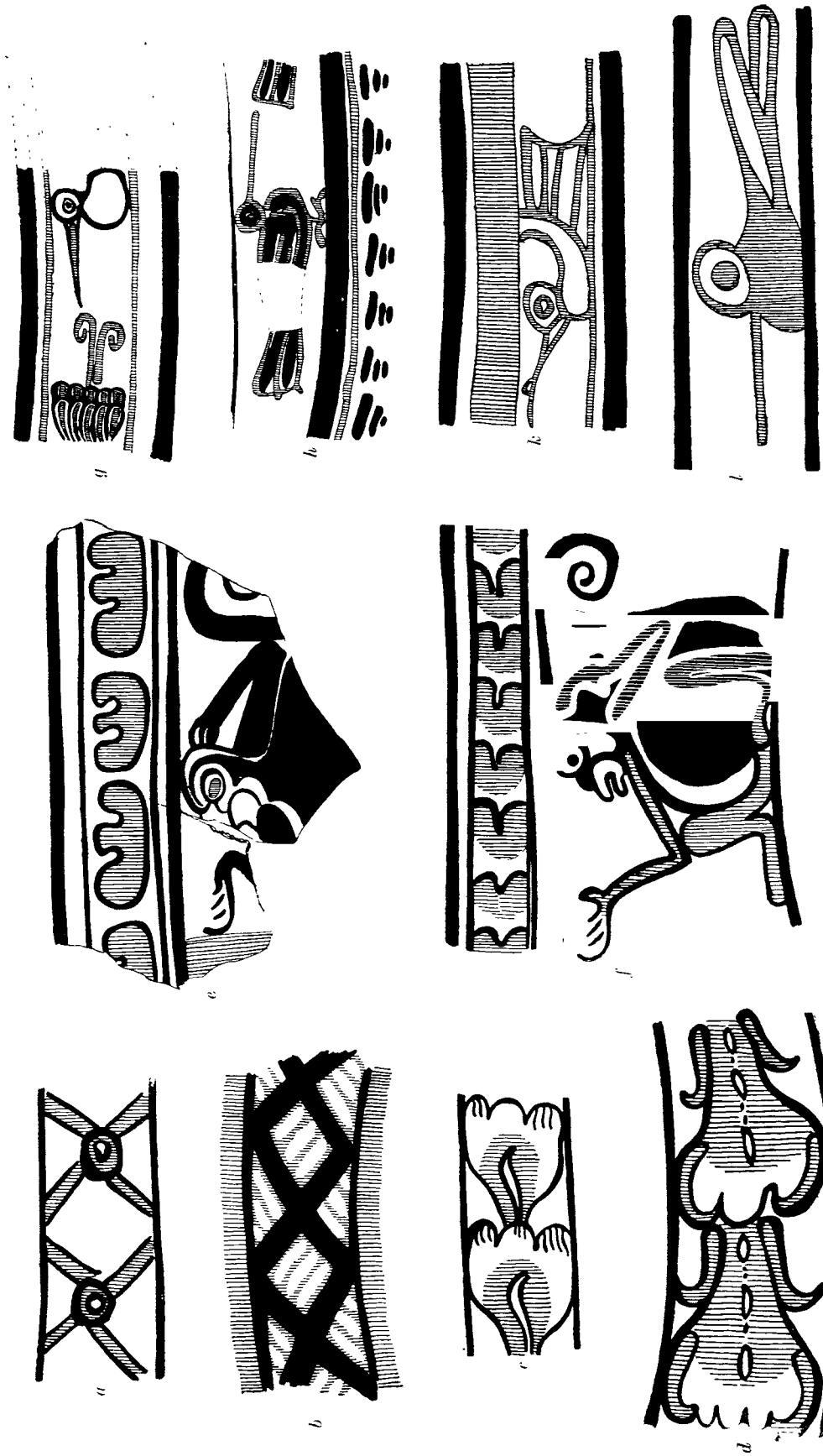


PAINTED POTTERY FROM CAVE. VARIETIES OF THE "TWIST AND BUD" PATTERN.

BRITISH MUSEUM EXPEDITION TO BRITISH HONDURAS. 1929.



PAINTED POTTERY FROM CAVE. FRET, STIPPLED, AND ROSETTE PATTERNS.



PAINTED POTTERY FROM CAVE. LATTICE, FLORAL AND ANIMAL PATTERNS.

BRITISH MUSEUM EXPEDITION TO BRITISH HONDURAS, 1929.

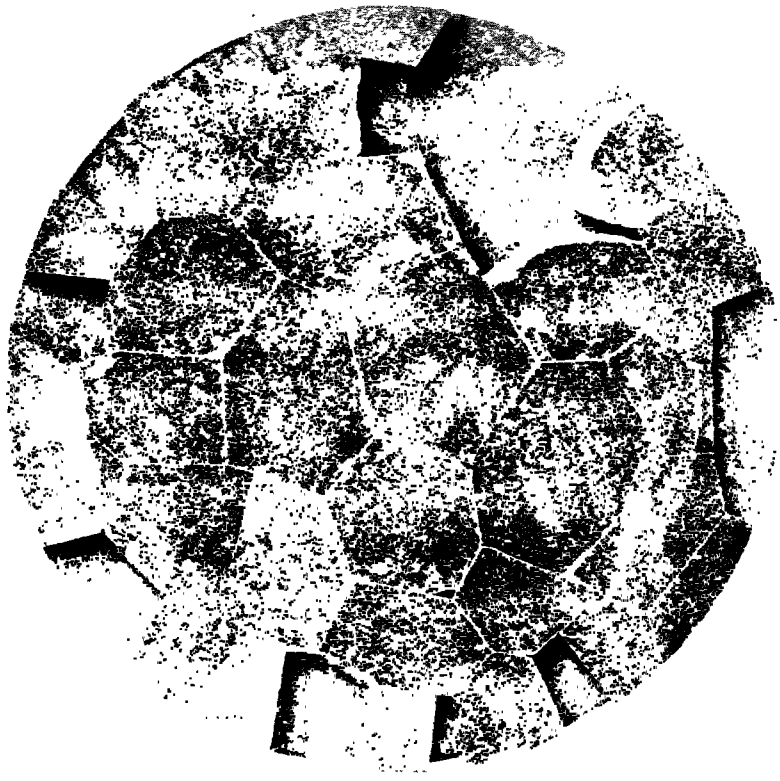


FIG. 2.

MOSAIC MIRROR OF IRON PYRITES ON A SLATE BACKGROUND. FIG. 1. SLATE BACKGROUND. FIG. 2. MOSAIC.

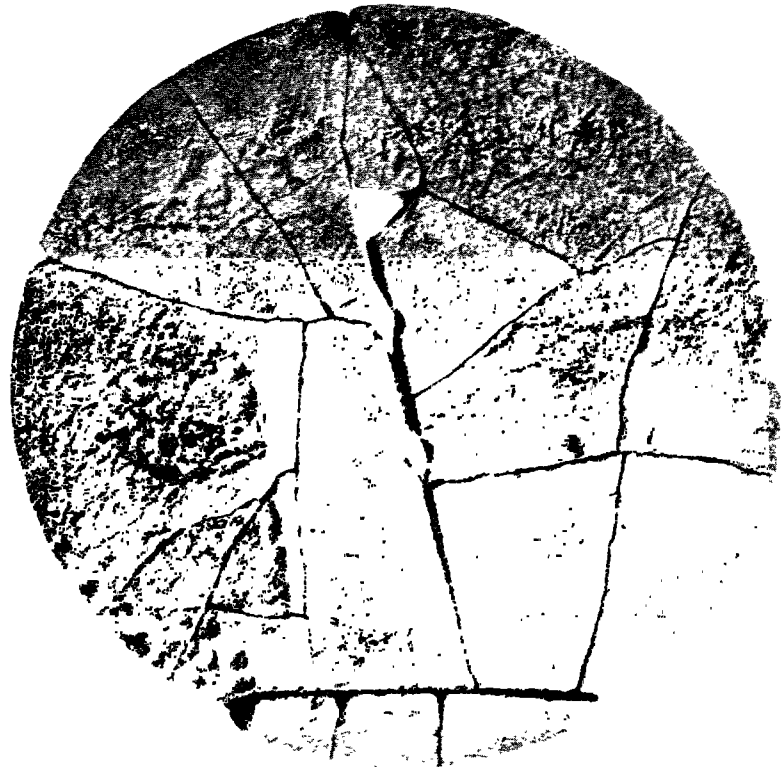


FIG. 1.

which may mean zero. Stela D. (e) at same city has an unusual glyph D. and no number. Stela I., Copan, has glyph D. and an unknown glyph, possibly a zero, and Stela N., Copan, has a form of glyph D. similar to this on Stela U., Pusilhá and having a form something like that which I take to be zero here, although, unlike the latter, it is not the common zero sign used in other parts of the inscriptions.

The point I wish to make is that when the date was that of a new moon the Maya always wrote glyph D. and might or might not add a sign for zero as well. This agrees with the meaning of glyph D. which might be translated "lunar day," as when it occurs with glyph E. it has no number, the number being given by glyph E.

Now there was an eclipse of the moon on 24th June, 438 A.D., so that the Initial Series date 9th July, 438, was fifteen days after and therefore fell on the date of a new moon or within a day of it. This is a strong confirmation of the readings of the Initial Series and Supplementary Series which, if correct, must necessarily show such agreement with each other.

In C. 3 and D. 3 there seem to be numerals, but I cannot read them nor the signs to which they are attached. C. 4 (left) must be the Uinal sign as it has as usual two numbers. In this case I think that it is the upper numeral which signifies the Kin number, and the lower one the Uinal number, as sometimes occurs. C. 4 (right) is plainly 11, 12, or 13 Caban. D. 4 has a numeral 15, but the attached sign, which is no doubt a month sign, is effaced. If the glyphs C. 3, D. 3 form part of a Secondary Series with those in C. 4, then I am unable to make a connection with the Initial Series date, but if they do not, then assuming that C. 4 does connect with the Initial Series—an assumption which is by no means certain—C. 4 (left) must read 3–15 because no other Kin number than 15 would connect Ik and Caban. The number at the side of the Uinal sign is ei–1, 2, or 3, so the number above it would be 15.

If to the Initial Series date 9–0–2–11–2 1 Ik 0 Tzec, 9th July, 438, we add this Secondary Series 3–15 we reach 9–0–2–14–17 12 Caban 15 Mol, 22nd September, 438. Therefore the erased month sign D. 4 may be restored as Mol.

It is in favour of the above reading that 22nd September is the autumnal equinox, and it may be noted that the Initial Series date is the first new moon after the summer solstice. Have we here an indication of the adjustment of a lunisolar calendar ?

The only other intelligible glyph is C. 6 (right) which is clearly 19 Tuns. The left of this glyph-block may show an ending sign, but it is doubtful, especially as it was not the practice to mark Tun endings unless the Tun number was 13 or a multiple of 5. If it is a Tun ending it is probably 9–0–19–0–0 10 Ahau 18 Yaxkin and the date may have been in the erased D. 6.

It is evident that neither this nor the Initial Series date can be the contemporaneous date of the inscription from the style of the glyphs Doubtless the missing portions of the stela carried the count forward to the contemporaneous date.

NOTES ON SOME ISLANDS OF THE NEW HEBRIDES.

By the late A. Bernard Deacon.

(Edited by Camilla H. Wedgwood.)

Foreword.

While he was waiting at Vila for a boat to take him to Malekula, Deacon took the opportunity of interviewing several of the natives who were gathered in Vila from the neighbouring islands, either as prisoners or as men in the Condominium police force. The following notes on Santo and Omba, and probably also on the *Mangge* of Ambrym, are the fruit of these interviews, supplemented by information kindly given to Deacon by Mgr. Doucéré, Bishop of Teranoudia and Vicar Apostolic of the New Hebrides, the Rev. Anderson, of Hog Harbour, Santo, and Mr. Salisbury, Condominium Government Agent at Hog Harbour. For the most part the notes left by Deacon on these islands were straightforward and needed only some slight rearrangement and expansion to prepare them for the press. I have, as far as possible, retained their original phraseology, particularly in passages which appear to be somewhat ambiguous, and I have discussed certain apparent contradictions and obscurities in the footnotes. Some of the notes, as, for instance, those on Death and the Disposal of the Dead in the Tasmant district of Santo are, however, fragmentary in the extreme, written in pencil on the backs of loose scraps of paper, and are, therefore, very inadequate, but sufficiently clear and important to make their publication possible.

The notes on the social organization of Epi and of Paama are much less satisfactory than those on the other islands, for they were more fragmentary. The discussion concerning the use of the kinship terms and the groupings of relatives which these terms suggest, has been added by the Editor of the notes, since it seemed desirable to emphasize the salient characteristics of the kinship systems of these two islands, and to indicate their affinities with the social structure of neighbouring peoples. The discussion and analysis has been carried out along the same lines which Deacon himself followed in his study of kinship in Malekula and Ambrym.—[C. H. W.]

SANTO.

The northern part of Santo can be divided into three distinct ethnic provinces. On the east is the culture of Sakau Peninsula, which, in its widest sense, may be said to stretch from the Jordan River on the north coast to Turtle Bay on the east. The people of this region are very tall and dark, well built and with frank and open characters. For dress the men wear the *malmal*, a kind of narrow mat, which is kept in place by a string round the waist. Unlike the *malmal* which is worn in Omba, it is not passed between the legs, but suspended so that both ends hang down in front. Often, however, the men will go entirely nude until they are eighteen or twenty years old, and even after this some of them wear only leaves.

The women wear a  -shaped piece of wood, which rests on the upper part of the buttocks, and is kept in position by a girdle round the waist.* Sometimes if a woman feels self-conscious she will wear a small leaf in front tucked into the labia.

To the west of the Sakau Peninsula lies the Big Bay area, that is the region lying inland to the south of the Bay, which is inhabited by people different in type from those of Sakau; while westwards, again, from this is the Cape Cumberland Peninsula. The inhabitants of this north-westerly region differ entirely from their eastern neighbours in physical appearance, language, and culture. They are very light-skinned and resemble strongly the people of West Omba. The similarity between these two peoples is more than a purely physical one, for the natives of Cape Cumberland are able to understand and make themselves understood by the West Ombans. In dress, too, they are alike, for the women wear the Omban-type of mat and the men wear the *malmal*, though, as in Sakau, they wear it hanging down in front, and have lately developed the fashion of allowing it to hang down so low as almost to trail upon the ground.

This light-skinned type extends southwards along the west coast as far as Wus, where a change occurs to the culture area which includes the district of Nogugu, Tasmant, and Tismulun. The people here are darker-skinned, shorter in stature and more crafty and deceitful in character than their northern neighbours. For the men the clothing is the same as in Cape Cumberland, while the women go nude, but are practically swathed in beads.

Hog Harbour, Sakau Peninsula.

Death and the Disposal of the Dead.

Deacon obtained a little information about beliefs and practices concerning death from a bushman called Nau, who came from the region inland from

* F. Speiser describes this block of wood as being worn by men in E. Santo. *Ethnographische Materialien aus den Neuen Hebriden* (1923), p. 193 Pl. XLII Figs. 28 and 36. J. R. Baker also illustrates it as part of the clothing worn by men formerly in Sakau. *Journ. Roy. Anthrop. Inst.* lviii, Pl. XXIV, Fig. 2. [Ed.]

Hog Harbour. He was born in the village of Lothkar, but had spent most of his life at Harden. He was also given an account of these by Mr. Anderson, of Hog Harbour. The account by Nau of the disposal of a chief has been given in the section dealing with membership of the graded society.

The following is the description written by Mr. Anderson. It will be noticed that there are certain discrepancies with Nau's version :—

"At the death of men only, the body is annointed with coconut milk. A commoner is then put under the ground in a small house ; a chief of any grade* is put on a bench in a small house. His face is painted black and red (blue was unobtainable), and all the tusks of the *nre* (hermaphrodite) pigs killed by him for feasts are put on his arms. If he has killed men, white fowls' feathers are also put in his hair. From six to ten days later four to ten pigs are killed. Up till now the women have remained in the house beside the body. Now they all blacken their bodies and the nearest relatives wind coconut-fibre ropes about their waist. Some of the women continue with the body inside the house for a hundred days. After this a feast is made and the house is fastened up, but no more pigs are killed.

"When any grade of chief dies, if he have four wives, then the two whom he married first are strangled, their friends being compensated in gifts by the friends of the deceased chief. If these are unable to make the necessary gifts then the women are spared. An erection is set up of two forked posts, with a cross-beam between. Over this a rope is looped in such a way as to make a noose, the ends of the rope being held, one at each side, by women. The wife who is to die is then given kava to drink, and two women take her by the arms and run her up and down, while the other women sing and dance. When these two are tired two others take their place, and this is repeated until the poor victim is too worn out to resist, when they put her neck in the noose. When she is dead her body is laid beside that of her husband, her face is painted black on one side and red on the other† a creeper rope is bound round her head, and she is left with the other corpse."‡

Mr. Anderson's statement concerning the fate of the soul is as follows :—

"After death the spirit of the man remains in the vicinity of the corpse until the pigs are killed on about the tenth day of mourning. Then it takes its departure for the mountain Takar, whence other spirits have come to escort it, dancing and

* Mr. Anderson apparently uses the word "chief" for a man who is a member of any of the grades, and "commoner" for anyone who is only Morkar, and does not distinguish between a man who has attained to the rank of Westele and those of lower ranks.

† According to Nau, the wives of men of grades Nawok to Wiriaru inclusive are painted blue on the left and red on the right side of the face : whereas the wives of men of the highest, Westele, rank are coloured red on the left and black on the right side.

‡ Unfortunately Mr. Anderson does not record at what stage in the funeral rites the widows are strangled.

shouting all the way, to the land of the dead. The natives firmly believe that they can hear the sound of this spirit-company. The spirit of a man who has been shot cannot go thus directly to its last home, but sits instead on a *nemas* tree at Nurur Osre, near the mountain Takar. When his friends have avenged him, then he moves on to join the community of the dead in Takar."

Nau gave further details about the passage of the ghost to the next world :—

"The ghosts of the dead pass along a long road on their way to a hill in Santo called Urerwesere, which is the abode of the dead. On one side of the road two *lou* trees bend themselves down. At this point two red *si* (hibiscus) flowers lie in the roadway, placed there previously by the trees. As each ghost comes along he is tempted to take the *si* flowers. If, during his life he has not killed a man the trees allow him to pick up the *si* flowers and pass on to the hill Urerwesere. If, however, he has killed a man one of the trees rebounds under him as he stoops to pick the flower, and, killing him, catapults him to Yetar in the sky. Yetar then eats the dead ghost. Such is the fate of all bad men, that is of all men who have killed another during their life-time. Urerwesere is the abode of the ghosts of the good. Yetar is good : his action in devouring the dead ghost is to be regarded as a punishment."*

The Story of Yetar.

The being called Yetar lives in the sky. According to one of Nau's statements he was never a man, and he is not a "devil" (ghost). Nau referred to him as a god, but he is not worshipped and no prayers are made to him. The following is the story which Nau told of Yetar :—

"A man went down to the sea one day to spear fish. He speared a fish and put it on a stone on the beach. After that he went back into the sea to spear more fish. When he returned he found no fish on the stone but a girl. He asked the girl whether she had seen a speared fish lying on the stone. She replied that she was the fish, and showed the spear wound on her arm. The man liked the girl and they went along the beach together. Someone met them, and asked the man whether the girl with him was a ghost, but he replied that she was his woman. After a time she bore him a family, one of which was Yetar. The man and the woman with Yetar were going along a road inland from the sea. Yetar was crying, and the man, to tease Yetar's mother, said, 'A fish's child is crying.' The mother was very cross and she left the father and took the child down with her to the coast. There there was a big rock called Sere (which can be seen still at Harden, Nau's village), inside which was a cave. Inside the cave lay a coil of rope.† It was

* As an instance of how misleading simple statements may be, it is interesting to note that Nau himself told Deacon on one occasion that the dead went to a high hill (mountain) in Santo ; that all men went there, irrespective of rank or whether they were "good" or "bad."

† The rope is called *Wer L(a)wei*.

pitch dark inside. The mother put down her child, and, cutting the rope, let the child drink the water which flowed from it. Then she went away. People asked her where the child was, but she said she had thrown it away on the beach and it had died. After a month she went to see Yetar. He asked her whether she had plenty of coconuts where she lived. She said 'yes,' and he asked her to bring him some. He was already big. She came next month and brought coconuts, and broke them and poured the milk over his head and rubbed him with the oil. He asked her if she had plenty of mats. She said 'yes,' and he asked her to bring him one to sleep on. When she came next moon he was still bigger, and asked her to bring him a bamboo. She came with the bamboo next moon. He was a young man now. He took the bamboo and cut his chest, his upper abdomen, his arms and his back. She went away. Next time she came there was a woman following her. She did not see the woman till she had arrived at the cave. When she saw her she enquired of her who she was. The woman said it was nothing, she had merely been walking behind her. The woman slipped into the cave behind her and cried on seeing Yetar, because he was so beautiful, and she desired him so much. She and Yetar embraced each other. When she came out the mother asked her what the marks on her breast, arms and abdomen were. She looked and saw that Yetar's cuts had been imprinted on her. She cried, and told Yetar's mother that she wanted to live with Yetar and to leave her own husband. Her husband learnt of this and vowed vengeance on Yetar. Yetar then made a canoe, stocked it well with sugar-canes, and sailed away to Big Bay in North Santo. That is the end of the story of Yetar. From the time that this happened cicatrization has been practised in this area (Hog Harbour), in imitation of what Yetar did. Men of high rank cicatrize chest, upper abdomen, arms and back—they are 'big fellow masters' like Yetar."

Besides being connected with the dead, Yetar is also concerned with the birth of children. When a boy or girl is still in the mother's womb Yetar comes down from the sky and "cuts" the fingers apart, separates the toes in the same way, cuts open the mouth, opens the eyes and ears, etc., thus forming a human child. When Nau was asked why the cuts were not visible on his hands he explained that the space between the fingers was the cut; that Yetar forms the fingers by cutting the, as yet undifferentiated, hand.

Taboos connected with Plants and Animals.

Two such taboos have been recorded:—The kingfisher (*nehi*) may not be eaten; infringement of this taboo results in shortness of breath when walking, running, etc. If anyone cuts a large creeper called *nowerur* he gets swollen glands and dies.

The Graded Society.

The system whereby all male members of the community are divided into a number of grades, membership of which is progressive and acquired by the making of payments and the giving of a feast, is found in the Sakau Peninsula as elsewhere in the Northern New Hebrides. Information concerning this system here was obtained by Deacon from Nau, the bushman mentioned above (p. 463). The rather meagre facts elicited from him have been supplemented by a brief account of the ritual involved in taking the different grades, sent to Deacon by the Rev. Anderson, of Hog Harbour.

There are five grades at Hog Harbour, called :—

Nawok (Navok).*	Wiriaru (Vuriaru).
Wonare (Vonaren).	Westele (Vuster).
Wiriar (Vuriar).	

Anyone who has not entered Nawok is called Morkar, which is equivalent to "small boy." Nau himself, although a full-grown man, was only Morkar, because he had not yet paid pigs to enter Nawok. The expense in entering even the lowest of the grades is considerable, for it involves the killing of 100 pigs, and for each successive grade another 100 pigs must be added, so that to become Wiriaru a man must supply 400 pigs, while for Westele a man kills "plenty, plenty pigs, all same leaves," as Nau expressed it. There is a recognized ritual method of killing the pigs. The animal's feet are bound together and it is killed by a blow on the forehead with a club, after which it is cooked in an oven of hot stones. In the first two grades, Nawok and Wonare, pigs are not killed in or on anything particular. At entrance to the higher grades, however, a circle of cycas leaves laid consecutively on the ground, is made behind the chief's house. Into this circle the pigs are brought—"plenty, plenty pigs"—and killed in turn by clubbing on the forehead. The circle may be entered only by the chief, that is, a man of Westele rank, and his family. Nau could not explain how the pigs were killed in the circle in the Wiriar and Wiriaru grades, for he did not know whether Wiriar and Wiriaru men were allowed within the cycas-leaf circle at the pig-killing ceremony.

The account of the ritual of the rise in rank from one grade to another as given by Mr. Anderson, is as follows :—

1. *Nacok.*—The candidate first builds a small house having two forked posts. No fence is put up around it. Two or three castrated pigs (*nob*) are then killed and eaten. One large hermaphrodite tusker (*nre*) is then fastened up, followed by 100 small *nre* laid in rows. The candidate then comes up. His face is painted black

* The names of the grades given in brackets are those given by Mr. Anderson : the others are those given by Nau. The lowest grade is that at the head of the column.

and red, in one hand he carries a club, in the other a basket of sacred stones (*thongi-urkar*). He dances along the rows of pigs in a hop-step-and-skip fashion, putting his heels to the ground and taps all the small *nre* on the head with the club, but does not kill them. When he reaches the ends of the rows he pauses, shakes his head and makes fearful grimaces. He then kills the big tusker (*nre*). This no one eats, but the candidate keeps the tusks. Throughout the whole time the gong is being beaten. The tusker having been killed the candidate is called Navok.

2. *Vonaren.*—At entrance to this grade a new house is made with two posts, but, instead of forks (as in Navok) the roots are placed uppermost, the root signifying a beginning. The candidate then kills ten large *nob* pigs. This is done without any dancing and the pigs are eaten. Then a fence is set up round the house and for this the candidate kills ten half-grown *nob* pigs, which are also eaten. Ground is then cleared for a garden, yams are planted and tended. When they are dry they are lifted, and the candidate appoints a day for the dance and big pig-killing. Every stage in the gardening process is initiated by the killing and eating of a *nob* pig; thus one is killed when the garden is cleared, another at the planting of the yams, another when their vines begin to grow, another before the garden is weeded.

The day for the final dance and pig-killing ceremony having been fixed the candidate goes round from village to village asking for pigs, either *nob* or *nre*. He carries with him the sacred stones in order to ensure that no one shall refuse his request. Then he tells the people to clear the tracks leading to his house and ten tall narrow erections are set up, five along each side of the house. They measure about $1\frac{1}{2}$ feet square and 20 feet to 30 feet high, and resemble large chimney-stacks. These are filled with coconuts and yams.

During the night preceding the final pig-killing there is a big dance round a large fire, during which the candidate dances around the outskirts of the ring of guests. Next day he kills ten large tusker *nob*, one for each of the "chimney-stacks," a dead pig being laid down beside each. These pigs are then distributed: the men who gave the first three pigs receive one each in return, the rest are divided among the other members of the Navok grade and are eaten. After this the man is Vonaren.

3. *Varvar.*—The house-building, garden-making, and feasting take place as in Vonaren. The only difference is that the candidate also makes a small garden about 100 yards from the house, in which he plants crotons and kava. Further, there are twelve "chimney-stacks" set up, six on either side of the house. The dancing lasts throughout the night, and the following day all the men go to the croton garden and fasten a tusker *nre* near the fence, which they then break down. Each man thereupon takes a branch of croton and one man leads the pig to the new

house, the others following, dancing and kicking it all the way. The candidate then kills this pig with a large black stone, after which he kills twelve *nob*, one for each of the "chimney-stacks," and these are distributed as before. The *nre* killed with the stone is not eaten. The candidate is now Vuriar.

4. *Vuriaru.*—Entrance into this grade is a repetition of the ritual for Vuriar. The house, the garden, the feasting and dancing, the croton garden, the twelve "chimney-stacks," twelve pigs, and the tusker are all as before. After the ceremony the man is Vuriaru.

5. *Vuster.*—For this, the last grade, the candidate makes a very large house, and on its completion twenty *nob* pigs with tusks are killed and eaten. Another twenty are also killed and eaten when the fence is set up around the house. A garden is then prepared all round the house and in it are planted sweet potatoes (*halhal*), which are the sign of the Vuster grade. On this occasion, too, twenty *nob* are killed and eaten, and four more are killed and eaten when these potatoes are weeded.

Trees are taken up by the roots and roughly dressed into a cruciform shape. One is set up for every man who has contributed a pig to the candidate. These trees are called *nahal*. They are whitewashed and finished off with crude drawings of fish, stars, moon, etc. All the women dance at intervals for one month, and then the *nahal* are set up. All the men except the candidate, then dance at intervals for one month.

A small house, which is sacred, is built in front of the large house, the fence round it being made of cycas-palm leaf, which is a taboo sign. The candidate now takes a number of large *nre* pigs only, puts them inside this sacred house and closes the door symbolically by setting up a cycas leaf in front of it. He then sends his eldest son to open the door, and himself enters the enclosure. Each man for whom a *nahal* has been set up, now brings ten *nre* pigs, and out of each group of ten, two are killed and the other eight are only tapped on the head. The candidate then calls out for everyone to hear, "Vuster." All the people reply "Vuster." The *nre* pigs are then thrown to the dogs. The candidate is now of Vuster rank, and has climbed as high in the social scale as is possible for any man.

According to Nau, a man who has purchased this highest rank is equivalent to a chief and has certain special privileges. In ornaments he is distinguished by having the right to wear pigs'-tusk bracelets all the way up both arms, and a mat round his loins, with tassels of some kind hanging from his hips. He is also cicatrized on his chest, the upper part of the abdomen, his arms, back, and thighs, and perhaps the whole way down the leg, though of this Nau was not certain. A chief has, too, the power of laying a taboo on anything by putting a cycas leaf upon it. The cycas leaf is always the sign or token of taboo, and anyone touching or taking an object upon which the chief has laid such a leaf will fall ill, his eyes will close, and

he will die. (This was dramatically represented by Nau.) The chief may send boys to cut the cycas leaves and to place them on the object to be tabooed. Before a big pig-killing ceremony, as for instance on the occasion of a man making a rise in rank, a chief puts a taboo on the coconuts by fixing such a cycas leaf to the trees. According to Mr. Anderson, the sanction behind this taboo is not a purely supernatural one, as might be inferred from Nau's account, for he says that if anyone interferes with the taboo he has to pay pigs, but is sometimes killed. With reference to the cycas leaf, it will be remembered, too, that apparently only a chief may enter the circle of cycas leaves which is set up at entrance to the three highest grades and inside which the pigs are killed. Another distinctive feature of chieftainship according to Mr. Anderson, is that crotons are planted only beside a chief's house, but it is not clear whether he is restricting the use of the word "chief" to a man of the highest grade, or whether he includes under that head any man who is not Morkar.

At death a chief receives special treatment. The milk of a coconut is poured over his head and his face is painted in red and blue: the forehead is coloured red on the right-hand side, blue on the left; on the cheeks are painted horizontal bars of red and blue, and on the upper lip a band of red, running from the septum of the nose to the lip, with a band of blue on either side. Fowls' feathers and those of other birds are tied to the back of his head, in such a way as to stand erect; the body is wrapped in coconut leaves and buried in a grave covered with the bark of a certain tree.* A cycas leaf is stuck upright in the ground over the grave. In the same grave is buried the wife of the dead man who is strangled on her husband's death. She, too, has her face painted in a distinctive manner, the left-hand side being coloured red, the right black, the dividing line passing from the top of the forehead to the point of the chin.

Nau drew a "picture" of the chief's house.† (*See* Fig. 1.) He was simply asked to draw a picture of how a chief's house looked, without any indication whether it was to be in plan, elevation, perspective, etc. The order in which the lines were drawn is indicated by the numbers. The centre-poles, 29–34, consist of inverted tree trunks, the roots forming a support for the ridge-pole, 5. 1, 2, and 5 are wooden poles: the transverse lines, 6–20, are bamboos, brought right over the ridge-pole from one side and down the other side; 21–28 are also bamboos; 35 and 36 represent the projection of the roof beyond the face of the house. There is a door in front but not behind, and there are no windows. Along the sides of the

* This does not tally with Mr. Anderson's account, which describes anyone over the rank of Morkar as being laid on a bench inside a small house which at the end of a hundred days is fastened up and deserted. (*See* "Death and the Disposal of the Dead.")

† There is no indication as to whether this is the dwelling-house of a chief or the house erected by him at the taking of the Westele grade.

house, but not along the front or back, are planted crotons, indicated by Nau in his "picture" by dots.

Apart from the rank of Westele, membership of the other grades is only marked by differences in cicatrization, though whether these do really correspond to any differences in rank appears to be doubtful. According to Nau, a certain part of the body is cicatrized for each grade. These cicatrizations are made by cutting the

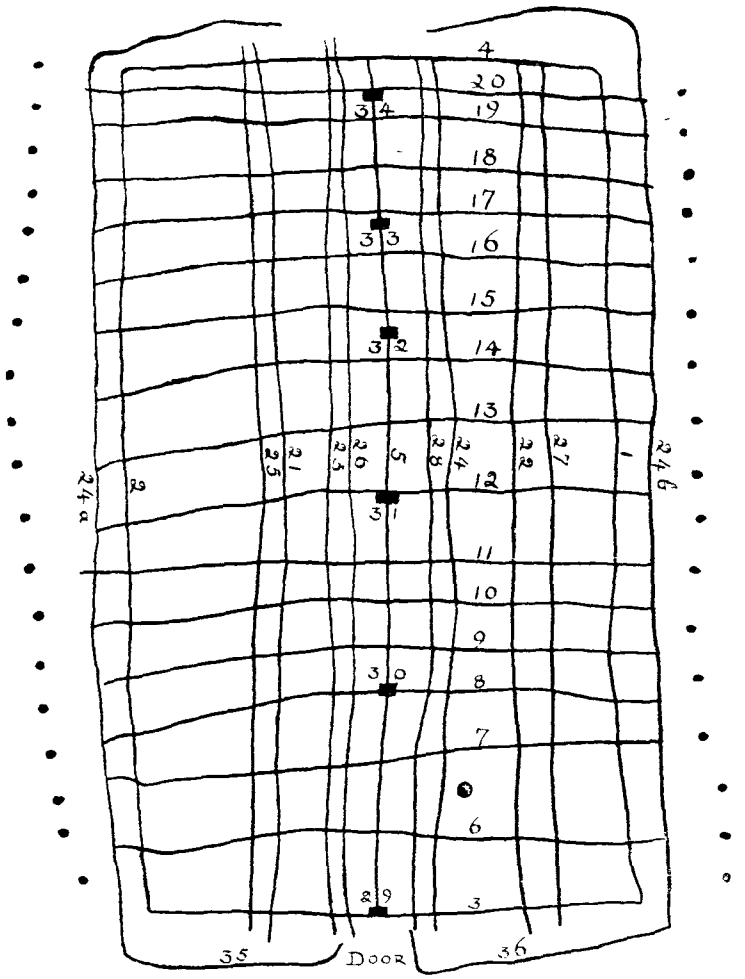


FIG. 1.—A "PICTURE" OF A CHIEF'S HOUSE, DRAWN BY NAU. THE FIGURES INDICATE THE ORDER IN WHICH THE LINES WERE DRAWN; THE DOTS ON EITHER SIDE OF THE HOUSE REPRESENT CROTON BUSHES.

skin with a piece of glass: the cuts are about $\frac{1}{2}$ inch to $\frac{3}{4}$ inch long, and appear to be arranged irregularly. Nau, who was only Morkar, had only his chest cut; a man who is Nawok has the chest and the upper part of the abdomen done: one who is Wonare has the arms done also; while a man of Wiriar and Wiriaru has chest, abdomen, arms, and back cicatrized. Mr. Anderson's statement is, however,

in conflict with this. He writes: "The cutting of the body and arms has nothing to do with the grades. It is a custom only. The pattern, they say, is taken from the markings on a large stone in a cave near Cape Quiros. This stone is called *Ser*, and was the first man to come to Sakau. Another stone is his wife."*

On the death of any member of the grades Nawok to Wiriaru (inclusive), his wife is strangled by means of a rope passed round her neck and tightened, her face is painted blue on the left-hand side and red on the right, and she is buried in the same grave as her husband. The wife of a man who is only Morkar is allowed to live.

NOGUGU.

Information concerning the Nogugu district was obtained from two natives of this area; Lewu, who was only a boy, but exceptionally intelligent for his age; and Alic, also a native by birth of Nogugu, now an old man and a Christian living at Fila Island. Most of the data which they supplied concern the graded society of this district, but Alic also gave information about the social organization.

Social Organization.

Alic appeared so intelligent that he was simply asked to give an account of the manner in which marriage was regulated at Nogugu. He spoke excellent English, and he gave the following information.

The whole community is divided into two "sides," or Valpapa, which, Alic explained, "means just like cut it in two halves—one, one side; one, other side." Each of these is subdivided into a number of "lines." A man belongs to his mother's "line," but not to his father's; while the father's sister's son belongs to the same "line" as the father, a man's own son belonging to that of his wife. To the wife's "line" belong also the wife's mother, wife's mother's mother, wife's sister, wife's sister's children, and wife's brother. There is a large number of "lines" in the Nogugu district, some of them occurring as far south as Tasmant (Tasmate), and Alic gave the following list of "lines" in the two Valpapa:—

Valpapa 1.		Valpapa 2.	
Tamerai.	Tapala.	Tapulu.	Tapala.
Tanute.	Tavia.	Taomo.	Tamata.
Talepigo.	Talone.	Tamelui.	Tapweta.
Tamau.	Wuntano.	Tawola.	Tagheribi.
Tasigo.	Wunwochi.	Tamwea.	
Tagebiga.	Tamolou.	Tawuro.	

* This is apparently connected with the legend concerning Yetar, which was told by Nau. In this it is said that the cicatrizations were made on men in imitation of those which Yetar cut upon himself. The stone, however, in this version of the tale, was not the petrified remains of Yetar himself, but only the cave where he grew to manhood. (*See* "Death and the Disposal of the Dead.")—[C. H. W.]

It will be noticed that there is a "line" called Tapala in both Valpapa, and Alic pointed out that they were not the same but distinct. It is also noticeable that whereas in the second Valpapa there are only ten "lines," in the first there are twelve, ten of which have for names words beginning with Ta-, as do all those of the second Valpapa, the additional two having names beginning with Wun. Further south, at Tasmant, there are similar kinship groups with names beginning with Wun-, such as Wunsune, Wunlep, Wunbweda, etc., and this was mentioned by Deacon to Alic with reference to the two Nogugu "lines" Wuntano and Wunwochi. Alic appreciated the point, and said that these two "lines" were composed of people from "down that way." This suggests, then, that the organization of Nogugu was originally based upon a dual organization with matrilineal descent, each moiety being subdivided into ten clans. Further, if Nogugu "Ta-" is equivalent to Tasmant "Wun-" then possibly Tapweta is the same name as Wunbweda, which suggests a close connection between the social structure of these two areas.

The regulation of marriage is simple, and of the kind typical of the dual organization. Marriage within the Valpapa is prohibited; a man must always seek his wife from the opposite "side." Formerly, too, it was the custom for a man to marry his mother's brother's wife in the event of his uncle's death.

Death.

Ghosts are called *demate*. At death the *demate* goes to Cape Cumberland, in the north of Santo, to a place called Oria.

Before the advent of Christianity there was a belief in a "god" called Sori who lived in the sky: this being is probably the same as So'o* of Tismulun district.

Nogugu District.

The Graded System.

The two accounts given of the graded society of Nogugu district by the boy Lewu and the old Christian Alic, are very incomplete and to some extent, conflicting, particularly in the number and names of the grades.

According to Lewu there are nine grades bearing the following names:—

(1) Sus (= teat).
(2) Po'u'ere.
(3) Wotare.
(4) No'o.
(5) Tar va'u pitu.
(6) Tar va'u olu.
(7) Tau va'u tsiwa.
(8) Tar boi.
(9) Moli (= orange tree.)

* *See* p. 488.

According to Alic there are seventeen grades altogether, two of which are divided into a number of sub-grades. They are called :—

(1) Chino.
(2) Eurini.
(3) Mala (= hawk).
(4) Banlai.
(5) Po'u'ere.
(6) Potori.
(7) Pue'e Ru'rua.
(8) No'o.
(9) Pu'er'tolu.
(10)—(*a*) Tor Vaga Tolu.
(*b*) ,, ,, Vali.
(*c*) ,, ,, Lima.
(*d*) ,, ,, Ono.
(*e*) ,, ,, Pitu.
(*f*) ,, ,, Olu.
(*g*) ,, ,, Chiwa.
(11) Tor Sunuwule.
(12) Tor Boi.
(13) Po'chi chi.
(14) Moli.
(15) (*a*) Tor No Wulurua.
(*b*) ,, ,, Tolu.
(*c*) ,, ,, Vati, etc.
(16) Liwusi.
(17) Tor metui (*metui*=coconut).

It will be seen that numbers (5), (6), (8), (10*e*). (10*f*), (10*g*), (12), and (14) of Alic's list correspond to numbers (2) to (9) of Lewu's. In both lists a boy who has not entered the lowest of the grades is called Tsura.

The men's club-house, called here *nagamal* (Lewu) or *nagomali* (Alic), is a long rectangular building, and is divided into a number of compartments by bamboos (*wuoi*) placed transversely across the floor of the building. In the centre of each of these compartments is a fireplace (*na haap*). There is a door at one end of the building only, and the higher the rank the further removed is its compartment from the door.

An interesting feature of this grade system, not recorded from other parts of the New Hebrides, is that the social solidarity between members of the same grade is recognized by people outside the society, for children of men who are of the same rank call one another *ulwu gina*, meaning "my *ulwu*."

The ceremony of rise of rank or the feast made for the occasion is called *roro*. A table-stone called *sua* (this is not the ordinary word for stone), is set up on four or six vertical supporting stones, called *kerin sua*. In the lower grades it is the father who erects this stone platform; in the higher grades the man making the rise in rank does this, or pays someone else to do it for him. According to Lewu around the stone certain trees are planted, which vary according to the grade which is being entered. For grades up to and including Tar Va'u Pitu only *mele* (cycas) trees are set up; for Tar Va'u Tsiwa, *mele* and *pras** trees; while for entrance into the Tar Boi and Moli, cycas, orange (*moli*), coconut and *pras* trees are planted. The man making the rise in rank then stands on the stone table and the pig or pigs to be killed are handed up to him. If he his entering the lowest grade this is done by his mother, but if he is making a higher rank his wife handles the pigs. He then kills the animals on the stone table by clubbing them on the forehead, while conches (*tavue*) are blown by the onlookers. Kava is then drunk,† and the dance called Welu is danced.

* This has not been identified; it is called *mamas* at Vila.—[A. B. D.]

† The verb "to drink kava" is *wosi*.—[A. B. D.]

This is performed in the same way as described by Roro in the Tasmant district (*see* below, p. 477), except that at Nogugu the men dance right round the fire. In the dance for certain of the ranks, panpipes (*lamwa*) are played. The candidate then makes a new fire (*na ovi*) in the *nagamal*, in the compartment of the grade which he is entering.

There is little information about the cost involved in entering any of these grades, but it is evident that membership of the higher ones was only possible for a wealthy man, for, according to Alic, 1,000 small pigs and 100 large pigs were necessary for entrance even into the grade Tor Boi.*

Here, as at Hog Harbour, men of the highest ranks or "chiefs" have certain privileges. Thus, a chief has the right to lay a taboo on coconuts by tying to a tree a frond of cycas fastened to a branch of the yellow *Hibiscus tiliaceus*.†

Members of the higher grades have, too, certain marks of distinction. A chief declares his rank by setting up round his house stones about 1½ feet high, and planting *patia* trees about it. According to Alic, people who are members of Po'chichi, Moli, Lewusi, and Tormetui have the right to wear three special ornaments: an arm-band called *panpan*, similar to the *panpan* described by Rovsali in Tismulun district: a band worn on the calf of the leg, whose proper name is *ospalo*, though Alic mentioned that people often incorrectly termed it *panpan* also (as indeed Rovsali himself did); and a head-band called *osporgetsa*, which resembles the *wunawuri* of Tismulun, but in Nogugu is painted blue only and not black, white and blue. Blue paint is symbolic of the highest rank, and Alic called it "sacred." At any important ceremony of rise in rank at which members of Moli and Liwusi would be present (though they would not participate in the dances, for this would be unbecoming in great "chiefs," but would stand aloof and watch from a distance), these would have the face and body painted blue; men of Tor Boi, a lower grade, would have only the face painted blue, the body being painted red; while grades below this are prohibited from using blue at all, and use red for the face and any other colour which they may fancy for the body. Another symbol of high rank, but not so high as blue paint, is a shell called *matoli*, which, from Alic's description, is almost certainly a cowrie. This is worn on the forehead by those who belong to Tor Vaga Vati or higher grades.

Tasmant District.

The information about this district was obtained from a man called Roro, now in the Condominium police force at Vila. In many respects it is more fragmentary than that about Nogugu, for Roro left his home while still young.

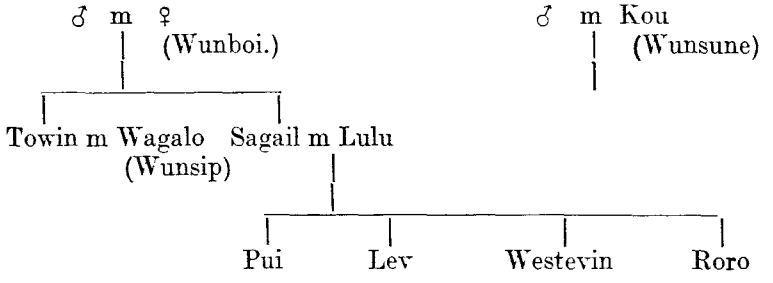
* On the number of pigs involved, see note, p. 493.

† *Cf.* the *taboo* sign used in the Tismulun district.—[C. H. W.]

Social Organization.

As in Nogugu, the community is divided into a number of exogamous kinship units with matrilineal descent. The names of some of them are: Wunsune, Wunkarai, Wunbweda, Wunatu, Wunlep, Wunsup, Wunlabiwo. Wunboi, Wunmaret.*

As has already been pointed out, the "Wun" of Tasmant seems to correspond to the "Ta" of Nogugu, and Wunbweda may be the same word as Tapweta. Further, two of the "lines" of Nogugu have the Tasmant form of Wuntano and Wunwochi, and are said to have had their origin from this district. Such similarities in nomenclature and indications of actual contact between the peoples of these regions suggest the possibility, if not probability, of close affinities in their social structure, as, for instance, the existence of a dual organization in Tasmant. Roro appeared to know nothing of any such dual grouping of the "lines," but since he left this district before he married it is not impossible that it may have existed without his knowing of it or recognizing its importance. It is significant, however, that according to his statement, the men and women of each "line" are "friends," but one "line" is not friends with another, which strongly suggests that each "line" or clan was an entirely independent unit. Apart from the existence of clan exogamy, there is no information about the regulation of marriage, nor does the genealogy of Roro, given below, throw any light on the question as to whether here also, as in Nogugu, marriage with the M.B.W. was formerly the custom.



THE GENEALOGY OF RORO OF THE CLAN WUNSUNE.

The Graded Society.

The graded society called Mol in the Tasmant district, was described by Roro as composed of six ranks:—

(1) Wutai.	(3) Tantare.	(5) Karai.
(2) Wotere.	(4) Warua.	(6) Tari.

As in Nogugu, a boy who has not entered the Mol is termed Tsura. All grades cook and eat separately at their respective grade-fires in the club-house, and any

* The final "p"—*e.g.* Wunsup, Wunlep—has a combined explosive and fricative quality, and ought, perhaps, to be represented by "pf"—*e.g.* Wunsupf. The "g"—*e.g.* Wagalo—is perhaps, more a guttural "h"; perhaps "gh" would be more appropriate.—[A. B. D.]

infringement of this regulation is punished by a fine—generally a small one—of one or two pigs.

As elsewhere, membership of the Mol entails the expenditure of wealth in the form of pigs. If a man is poor and cannot afford to kill the necessary number of pigs to enter the lowest grade, he receives the following appellations at successive periods of his life :—

(1) Tsura = quite a small boy.
(2) Tsura Tatolau = young boy.
(3) Wulno = a boy who has not yet begun to shave.
(4) Wares = a man who shaves.
(5) Wulmado = (?)
(6) Vu pu = an old man.

These names are only used to designate men who have remained outside the Mol.* If a man is Wutai or higher, then, no matter what his age, he is always referred to by the name of the grade to which he belongs.

Members of the Mol are further distinguished, in that they may not eat female pigs, which are permitted to women and non-members.

The ceremony of rise in rank from one grade to another is as follows :—

(1) *Wutai.*—If a boy, who is Tsura, wishes to become Wutai, his father gives him one quite small pig, which he kills. The pig is then cooked and eaten. The father then gives him two or three more small pigs ; these the boy takes to some other man (Roro did not know who), and is given one large pig in exchange. A small "tower" or platform of stones is then constructed, measuring about 4 feet across and 3 feet high. In a circle round this stone platform reddish-leaved crotons (*pau*) are planted, an opening being left at one place in the circle so that it can be entered. On the top of the platform a hole is left in the stones, and into this a cycas tree (*muel*) is inserted or "planted." The boy ascends this stone platform, and, standing beneath the cycas tree, he kills the pig. This pig has its hind feet, but not its fore feet, tied together, and it is killed with a two-ended club (that is, it has at each end an expansion or head) by a blow on the forehead. While the boy is killing the animal conches are blown by his brother and sister's husband, and at the same time, or immediately afterwards, the boy pronounces his new name, Wutai. This takes place at about 1 p.m. The boy then makes a new fire, called *tapu aap*, in his house.† At about 6 p.m. the dance Welu

* The women have no grades.—[A. B. D.]

† From the phrase "his house" it seems that the boy's own dwelling-house is meant. In Nogugu it will be remembered the new fire is lighted in the appropriate compartment of the club-house ; in Tismulun there is no mention of any fire-lighting ceremony. In the Sakau peninsula, Mr. Anderson records that a house is erected by the candidate for the ceremony, but there is no suggestion that this is done in Tasmant, nor in Sakau Peninsula is there reference to a fire being lighted in the house.—[C. H. W.]

is begun, and this is performed throughout the night until 6 a.m. next day.*

The dance Welu is performed in the same way at each rise in rank in the Mol. A large fire is made in the middle of the dancing-ground. The whole community takes part; the men are ranged up on one side, the women on the other, male children being with the men, female ones with the women. In the main figure of the dance a row of men, with spears in their hands, dances up to the fire, swings round and dances back to its original position; meanwhile the women mark time by stamping, but without moving from the position in which they were ranged up, nor do they, at any stage in the dance, ever move up to the fire. Throughout the performance the big gongs (*pue*) lying on the ground are beaten vigorously.

The entrance to this grade is unique, for in none other in this district is there any stone-work or planting of trees, nor does the candidate pronounce his new name except on becoming Wutai.

(2) *Wotere.*—When a man who is Wutai wants to become Wotere he goes and tells his friends† in other villages that he is going to make a feast and invites them to come and bring food—yams, bananas, coconuts, etc. A row of 100 sticks is then set up in the dancing-ground and cycas fronds are bound round each. One hundred pigs are then brought, with their hind legs tied together and one is fastened to every stick. Then, to the accompaniment of the blowing of conches, the candidate moves along the row killing the pigs. One pig is then presented to each village which has been invited; the candidate makes a new fire (*tapu aap*), and Welu is danced as for Wutai.

(3) *Tantare.*—Soon after a man has become Wotere he begins killing pigs for Tantare. For the rise to this rank the pigs are not killed all on the one day, but one pig is killed each week. Since 200 pigs must be killed for entering Tantare the whole process takes about four years. At the end of this time, when all 200 pigs have been killed, the candidate prepares a small feast at which he kills five pigs, while conches are blown, and makes a new fire (*tapu aap*). As usual the proceedings close with the all-night dancing of Welu.

(4) *Warua.*—A man who is Tantare and wants to become Warua sets up in the dancing-ground a long pole (of any wood). To this 30 ropes are fastened at equal intervals along its length in such a way that the free ends lie in a straight line leading

* This should be contrasted with the Tismulun practice where, except in the lowest grades, when a short performance of the dance Welu closes the ceremony of a rise in rank, this dance is performed from 6 p.m. to 6 a.m. on the night preceding the pig-killing. (*See* p. 491.)—[A. B. D.]

† Roro said, concerning the social organization of Tasmant district, that men and women of each matrilineal clan were "friends," but that one group was not "friends" with another. It is possible, therefore, that the "friends" invited by the candidate who is entering a higher rank, may be members of his own clan in other villages, not only friends in the more general sense of the word.—[C. H. W.]

away from the pole, that of the lowest rope being nearest the pole, while that of the top rope is farthest away. (*See* Fig. 2.) To the free end of each of these ropes ten pigs are fastened (making 300 pigs in all), and these are then killed (in the usual way by clubbing) in turn, beginning with the group tied to the top rope, to the accompaniment of conch-blowing. When all have been clubbed the ropes are cut and the pigs are distributed "to all the people." This being ended the candidate makes a new fire and Welu is danced through the night.

(5) *Karai.*—A man who wishes to rise from Warua to Karai proceeds exactly as though he were taking the rank of Wotere, but instead of erecting a single row of 100 sticks he sets up two rows each containing 200 sticks, so that he kills 400 pigs in

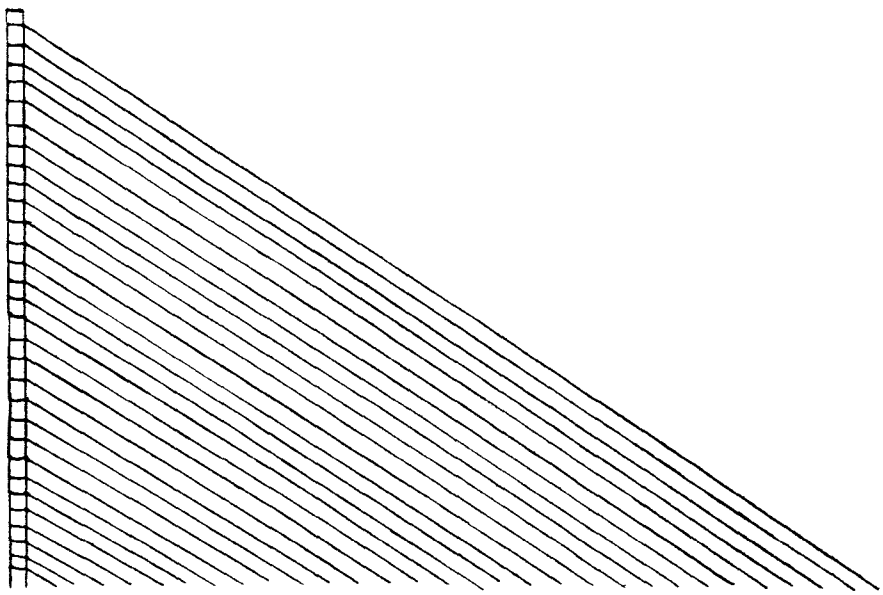


FIG. 2.

all. The sticks for Karai, too, unlike those for Wutai, are not decorated with cycas fronds. A new fire is made and Welu is danced as before.

(6) *Tari.*—To become Tari the proceedings are the same as for Wotere and Karai, but four rows of sticks are set up (of (?) 125 sticks in each row), and 500 pigs are killed.

Here, as in other parts of Santo, "chiefs," or men of high rank, have the right of laying a taboo on objects by attaching cycas fronds to them. As elsewhere in Santo, too, each grade has its distinctive body-painting or ornaments which are worn when dancing Welu, but the colour blue, which in Nogugu is reserved for the higher grades, is in the Tasmant Mol used by high and low.

The decoration for Wutai is a blue stripe running in a curve from the right shoulder down the right side of the chest to the side of the body just below the ribs.

This painting is known as *et-sa*. (*See* Fig. 3.) In addition a fowl's feather, painted red, is bound about the forehead.

The painting for Wotere is a simple band of red across the forehead, while for Tantare a man has two red spots just above the outer ends of the eyebrows and a white one in the centre of the forehead just below the hair. A member of Warua has the right half of the face painted white, the left half unpainted, and thrust in his belt at the back, over the hips, are two bunches of tapering, pale-green, yellow-spotted croton leaves. The Karai grade is marked by the forehead and the right-hand side of the face being painted blue; while people of Tare are distinguished by the absence of face-painting and the wearing of a necklace of beads. In all the grades the body is rubbed over with coconut oil.

Death and Disposal of the Dead.

When a man dies the body is kept in the house for two days, and his relatives and those of his wife come and mourn over him. A hole is then dug in the ground,

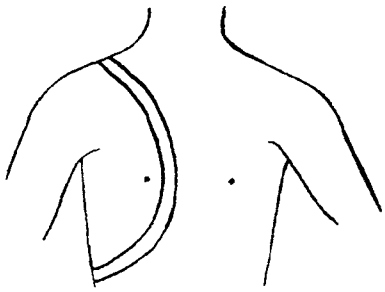


FIG. 3.

the corpse is wrapped in mats and buried. If the deceased was a member of the Mol, red hibiscus bushes are planted over the grave, and small stones are erected round it, but for others these are omitted. The widow and children of the deceased paint their faces and bodies black with charcoal and weep over the grave.

The land of the dead is called Taulan and is in the sky, and thither, at death, go men of all grades. Here lives the "big chief" Mol. His name is the same as that of the graded society, and his position in the other world is equivalent to that of a man of Tari rank in this. Men pray to him, and when anyone drinks kava (*malo*), which is done only by men, he "sings" to Mol. Mol is evidently equated with the Christian God, for Roro said that he had a son called *Iesu*.

Agriculture.

Irrigation for taro is practised in this district. The verb for it is *tun*.

TISMULUN DISTRICT: SOUTH-WEST SANTO.

While at Vila Deacon obtained information concerning this district in the south-west of Santo from Rovsali, a native of Wirara village and a member of the clan Lasurwai. (*See* Fig. 4.) He was at the time in the British gaol at Vila for participation in the murder of Clapcott, of Tismulun, and was, according to Deacon, a man of more than average intelligence.

Social Organization.

The community of the Tismulun district is divided up into a number of kinship groups with matrilineal descent. The names of these kinship groups are the same

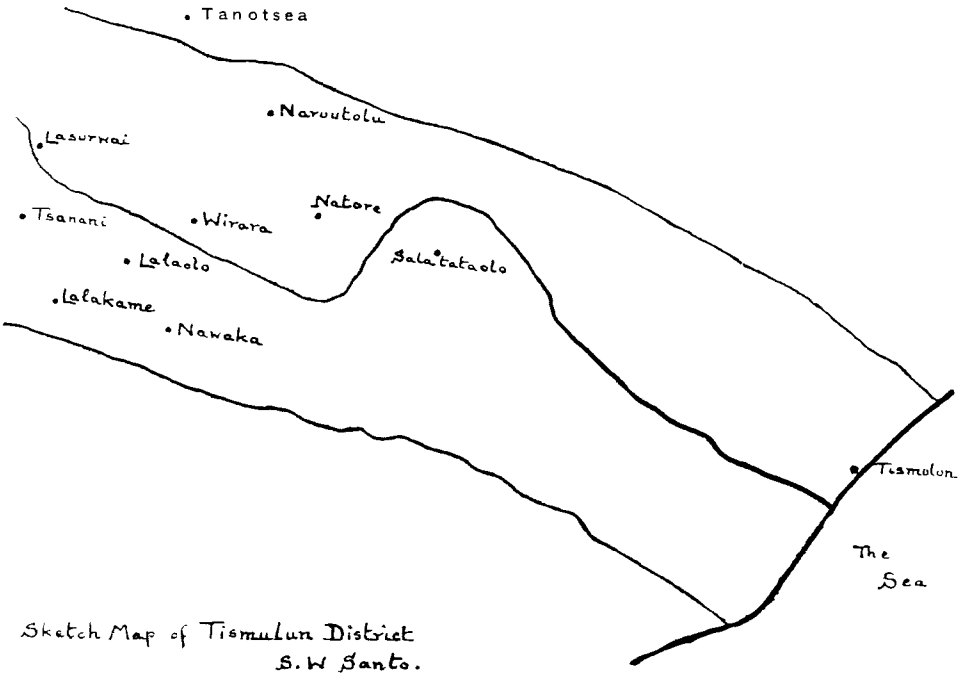


FIG. 4.

as those of the villages of this district, but, whether at some time in the past they were ever local kinship groups or not, they are clearly not so to-day. This is evident from the fact that, though membership of the kinship group is determined through the mother, marriage is patrilocal and inheritance patrilineal. Thus, referring to the genealogy of Rovsali (p. 485), where the clans are printed in brackets below the names of the people, we find, for instance, the boy Olo, belonging to the clan Natore, living in the village in which his father and grandfather lived, though these belonged to the clans of Lasurwai and Nawaka respectively. We may, therefore, recognize two sets of kinship groups—that in which descent is matrilineal, which bears the name of a village and the patrilineal village-group. The genealogy of Rovsali and his

wife gives enough evidence to show that the matrilineal kinship group is an exogamous unit, that is, a clan, but there is no clear statement as to whether the patrilineal village-group is also exogamous, or whether it regulates marriage in any way. In the following account, derived from the information given by Rovsali, it is by no means always clear which of the two groups, the matrilineal clan or the patrilineal local group, is being referred to. (*See* below, p. 486, note.)

A list of kinship terms was obtained by concrete examples drawn from the genealogies of Rovsali and his wife Vetawo, imaginary sons and daughters, etc., being added when necessary.

*List of Kinship Terms.**

F.F. [m.w.s.]	piku.
M.F. [m.w.s.]	piku.
F.M. [m.w.s.]	tabugu.
M.M. [m.w.s.]	tabugu.
M.F.Sis.	tabugu.
M.M.B.	′tauraku, vetiku, *or* piku.
F.	tamaku.
F.B.	tamaku.
F.Sis.	vetamaku; vepaliaku.
M.	tinaku.
M.Sis.	tinaku.
M.B.	vetiku: tauraku.
eB. [m.s.]	toaku.
eSis. [w.s.]	vetoaku.
eSis. [m.s.]	vetoaku.
ySis. [m.s.]	vetasigu.
F.Sis.S. [m.s.]	toaku; tasigu.†

* Possessives are expressed by suffixes, thus :—

Singular.	*Plural.*
1. *Tamaku*, my father.	1. (incl.) *Tama gu*, our father. (excl.) *Tama gu aseka*, our father.
2. *Tama m*, thy father.	2. *Tama mom*, your father.
3. *Tama na*, his father.	3. *Tama ra*, their father.

and by the postpositions—

1. *Laoiau noku*, my tree.	1. (incl.) *Laoiau noga*, our tree. (excl.) *Laoiau noga aseka*, our tree.
2. *Laoiau noum*, thy tree.	2. *Laoiau nomim*, your tree.
3. *Laoiau nona*, his tree.	3. *Laoiau nora*, their tree.

or by prepositions—*Noku laoiau*, *Noum laoiau*, etc. (On the significance of *no-* in possessives, see Codrington, *The Melanesian Languages* (1885), p. 129.)—[A. B. D.]

† The terms *tasigu*, *toaku*, *vetasigu*, and *vetoaku* are used according to the relative age of the speaker, and the person to whom he is speaking or referring, just as they are when used between siblings.—[A. B. D.]

List of Kinship Terms—contd.

F.Sis.D. [m.s.]	natasigu.
F.Sis.S. [w.s.]	toaku : tasigu.*
F.Sis.D. [w.s.]	natasigu.
W.F.M.	tabugu.
W.M.M.	tabugu.
F.Sis.H.	toaku ; paliaku.
M.B.W.	tabugu.
W.F.	paliaku.
W.M.	vepaliaku.
H.F.	vetiku : tauraku.
H.M.	tabugu.
W.Sis.	tauku.
W.B.	tauku.
H.B.	toaku.
H.Sis.	vetoaku.
S.Ch. [m.s.]	maapiku (♂) : vemaapiku (♀).
D.Ch. [m.s.]	maapiku (♂) : vemaapiku (♀).
S.Ch. [w.s.]	maapiku (♂) : vemaapiku (♀).
D.Ch. [w.s.]	maapiku (♂) : vemaapiku (♀).
B.D.Ch. [w.s.]	
Sis.D.Ch. [m.s.]	
Ch. [m.s.]	natuku (♂) : venatuku (♀).
B.Ch. [m.s.]	natuku (♂) ; venatuku (♀).
B.Ch. [w.s.]	(?) natuku (♂) : venatuku (♀).
Ch. [w.s.]	natuku (♂) : venatuku (♀).
Sis.Ch. [w.s.]	natuku (♂) : venatuku (♀).
Sis.Ch. [m.s.]	eluaku (♂) : veeluaku (♀).
yB [m.s.]	tasigu.
ySis.[w.s.]	vetasigu.
yB. [w.s.]	tasigu.
eB. [w.s.]	toaku.
M.B.S. [m.s.]	tasigu : toaku.*†
M.B.S. [w.s.]	natasigu.†

* The terms *tasigu*, *toaku*, *vetasigu*, and *vetoaku* are used according to the relative age of the speaker, and the person to whom he is speaking or referring, just as they are when used between siblings.—[A. B. D.]

† There is some confusion about the terms used for the M.B.S. According to the most complete list, *natuku* is given as the reciprocal for father's sister, but the words "mother's brother's son" are appended to it, instead of "brother's son" [w.s.], and the use of *natuku* for this cross-cousin is recorded in an earlier rough list and in a genealogical representation of the kinship terms drawn up from this early draft. Lower down, on the most complete list,

List of Kinship Terms—contd.

M.B.D. [m.s.]		
M.B.D. [w.s.]		
S.D.H. [w.s.]		
W.B.Ch. [m.s.]		tasigu (♂); vetasigu (♀).
H.Sis. Ch. [w.s.]	. ..	maapiku.
D.H. [m.s.]..		paliaku.
D.H. [w.s.]		paliaku.
S.W. [m.s.]		veluaku.
S.W. [w.s.]		vemaapiku.
Sis.H. [w.s.]		tauku.
Sis.H. [m.s.]		tauku.
B.W. [m.s.]		vetoaku : vetasigu.*
B.W. [w.s.]..	.. .	vetoaku : vetasigu.*

This list shows several interesting features, as, for instance, the classing of male cross-cousins with own brothers [m.s.], though the F.Sis.D. is not classed with sister : the wife's brother's son and daughter with own younger brother and sister ; the brothers' wives with the sisters : and the classing together of grandmothers, mother's father's sister, mother's brother's wife, and wife's father's mother. Unfortunately the terms for mother's brother's daughter and mother's brother's daughter's daughter are not recorded. These groupings of relatives, which are unusual, in that people one generation apart are classed together, are partly explained by the system of regulating marriage.

Besides the prohibition against marriage within the clan there are certain marriage injunctions. Rovsali volunteered the information that the old men say that a man should marry either his mother's brother's daughter's daughter or his father's sister's daughter. Such marriages were by no means compulsory, but were approved as correct. More exactly, an old man would say, "You go look 'long girl belong daughter belong vetiku ;† you like girl you marry him, you no like girl.

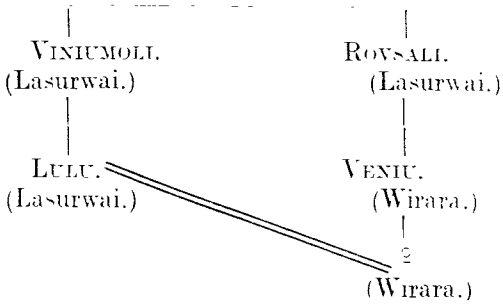
however, the terms *tasigu* (or *toaku*) and *natasigu* are recorded as M.B.S. [m. & w.s., respectively] in their correct place as reciprocals to the terms of F.Sis.S. and F.Sis.D. Since the F.Sis.Ch. are addressed by the terms for siblings, it seems most probable that the same terms would be used for the other set of cross-cousins, for in other parts of the New Hebrides where the term for child is used for M.B.Ch., as in Malekula, the reciprocal is inevitably "father." If we accept it, therefore, that both sets of cross-cousins are called sibling, then the term *natuku* (child) is the natural one for a woman to use to a brother's child, that is, it is probably correct to regard it as the true reciprocal to the term for father's sister.—[C. H. W.]

* The terms *tasigu*, *toaku vetasigu*, and *vetoaku* are used according to the relative age of the speaker, and the person to whom he is speaking or referring, just as they are when used between siblings.—[A. B. D.]

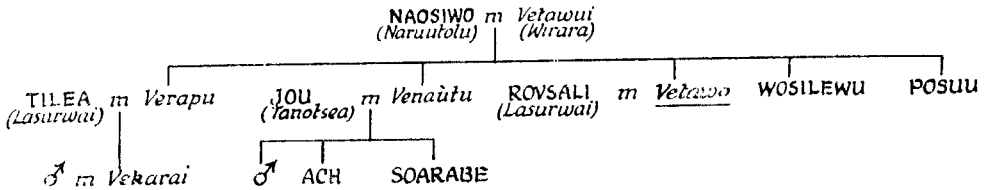
† The terms *vetiku* and *tauraku* for mother's brother are, apparently, interchangeable. Deacon could discover no difference in use between the two forms.

you no marry him. Suppose you no marry him, you go look 'long daughter belong sister belong father: suppose you like daughter belong sister belong father you marry him: you no like him no marry him." In illustration of the former marriage he referred to an hypothetical daughter's daughter of his mother's brother Nu'ui. (*See* "Genealogy.") With reference to the latter marriage the following came to light: When asked what he would call Vewulusul of Wirara (his father's sister), Rovsali at first answered *vepaliaku*. He then explained that she was really *vetamaku* but he would call her *vepaluku* if he married her daughter Vetawui Merei. Actually he did not marry her, for she died young. The fact that he first spontaneously gave *vepaliaku*, suggests that he would on many occasions refer to Vewulusul by this term, though since he did not marry Vetawui Merei, *vetamaku* was more correct. Possibly it was intended that he should marry Vetawui Merei (since he had no mother's brother's daughter's daughter, she would, according to Rovsali's general statement, be the most suitable wife for him), and called Vewulusul *vepaluku* in anticipation. He asserted, however, that a man who did not marry his father's sister's daughter would continue to call his father's sister *vetamaku*. This is especially interesting, for it shows that *vepaluku* (and presumably *paluaku*) are genuine affinal terms, and that in the event of a man marrying the daughter of a relative he would substitute the terms for wife's father and mother for the earlier kinship terms.

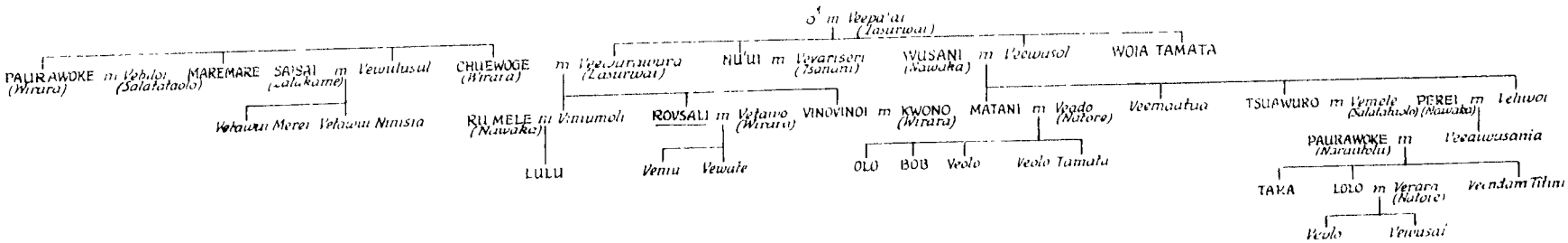
Rovsali gave a further instance of the change in mode of address resulting from marriage with a relative. He said that if his daughter Veniu married, and had a daughter, Lulu, his sister's son would probably marry her if he were alive, since she would be his mother's brother's daughter's daughter. In the event of this marriage Lulu would cease to call Rovsali *tavuraku* or *vetiku* and call him instead *piku*, that is grandfather, thus relegating himself to his wife's generation, regarding her mother as belonging to the generation of his own mother and father's sister, and her mother's father, therefore, to the generation of his father's father. If he chose, however, Lulu might wait and marry Veniu's granddaughter, that is, his mother's brother's daughter's daughter's daughter.



If neither the mother's brother's daughter's daughter nor the father's sister's daughter were available or desirable, a man would choose by preference a woman



GENEALOGY OF VETAWO OF WIRARA CLAN, WIFE OF ROVSALI, OF LASURWAI CLAN.



GENEALOGY OF ROVSALI OF LASURWAI CLAN, WIRARA VILLAGE; TISMULUN DISTRICT, S.W. SANTO. THE NAMES IN BRACKETS ARE THOSE OF THE MATRILINEAL CLANS TO WHICH THE INDIVIDUALS BELONG.

belonging to his father's place. For this reason Rovsali chose for his wife Vetawo, who belongs to Wirara, as does his father Chuewoge.*

Rovsali further volunteered the following information: Vewulusul, his father's sister, had two daughters, Vetawui Merei and Vetawui Ninisia of the clan Wirara, but living at their father's village Lalakame. Suppose Vetawui Merei marries and has a daughter, and suppose again that this daughter marries and has a daughter who also marries and has a daughter, this last will be the great-great-granddaughter of Vewulusul. (This was checked thus: grandmother = *tabugu*, great-grandmother = *tabugu arua* (*arua* = two): great-great-grandmother = *tabugu atolu* (*atolu* = three): the imaginary girl in question calls Vewulusul *tabugu atolu*). This girl would then be sent back "along place" of her great-great-grandparents in the female line, that is, back to Wirara ("place belong Paurawoke, Chuewoge and Vewulusul"). Here, if possible, a husband would be found for her among the sons of the men who are Wirara. This appears to agree with the custom of marrying a woman of the father's group, failing the mother's brother's daughter's daughter or the father's sister's daughter.

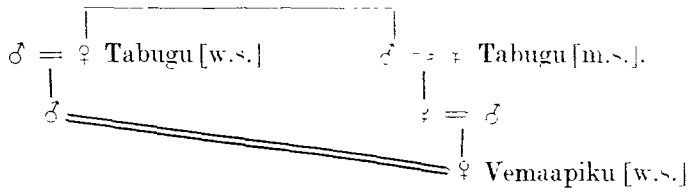
Marriage with the mother's brother's daughter is, it seems, to be prohibited. When discussing the preference for marriage with the mother's brother's daughter's daughter, Rovsali was emphatic in negativing the suggestion that he would marry the mother's brother's daughter.† This is significant, for it shows clearly that there is a recognized distinction between the two sets of female cross-cousins (a distinction indicated by the kinship terms, wherein the mother's brother is not classed with the father's sister's husband nor the father's sister with the mother's brother's wife), and hence we may deduce that the dual organization found in the Nogugu, and possibly in the Tasmant districts, was not a feature of the social structure of Tismulun.

Analysing the kinship nomenclature in the light of these preferential marriages, we find that the classing together of the mother's brother's wife and wife's mother's mother as *tabugu* [m.s.], the husband's mother and mother's father's sister as *tabugu* [w.s.], and calling the son's wife *remaapiku* (the term for a woman in the grandchild's

* This statement is rather obscure. In Rovsali's genealogy, his father, Chuewoge, and his wife, Vetawo, are classed as people of the Wirara clan, and Chuewoge is said to live at Wirara. Since descent in the clan is matrilineal, and residence and inheritance are patrilocal and patrilineal, it seems improbable that a man would by right belong to the village which gives its name to his clan; it is difficult to see how Chuewoge can belong to both the village-group Wirara and the clan Wirara. It is stated elsewhere that, failing the first two preferential marriages, a man should take a woman of the same group as his father, but whether this means the same kinship-group or the same local-group is not clear. This problem does not seem to have occurred to Deacon: at least he makes no mention of it in his notes, and the hypothetical marriage of Vewulusul's great, great granddaughter, described below, does not throw any light on it.—[C. H. W.]

† A separate note running "marriage with mother's brother's daughter taboo," shows that it is not only that such a marriage is not considered an alternative to marriage with the mother's brother's daughter's daughter, but that it is definitely forbidden.—[C. H. W.]

generation), is in accordance with the customary marriage with the mother's brother's daughter's daughter. (*See* Diagram.)



The arrangement of the marriage is initiated by the would-be bridegroom. If a man wants to marry a certain woman he gets a friend of his to go to her father and ask him whether he would be willing, and how many pigs he would require, to part with his daughter. The emissary returns and tells his friend who desires the marriage. The latter then kills the required number of pigs and takes them to his prospective bride. She gives them to her mother, who, in turn, gives them to her husband, the final recipient. (Rovsali paid eight pigs for his wife Vetawo). The man then takes the girl and returns with her to his village, where they begin living together. After ten days the young husband prepares a small feast in his house for his father- and mother-in-law, who come from their village for the occasion. The young husband offers cooked pig to them and to his brother-in-law, who also comes. When another ten days have elapsed, after this feast, the young couple visit the bride's parents in her village, accompanied by a party of men and girls from the husband's village. The mother- and father-in-law kill two or three pigs and prepare a small feast, and the father-in-law distributes food all round to the whole party. After this small feast the visiting couple and their companions return home and everything is finished.

Death and the Disposal of the Dead.

When a man dies his face is painted according to his rank in the graded society, as it would be for dances. The body is then wrapped in a mat and further enveloped in coconut leaves and buried. The mode of burial is different for members of the three highest grades, Tari, Moli, and Liwusi, from that given to those of the lower grades. For the latter, that is for those of Mala, Paka, and Karai, a hole is dug in the ground, at some distance from the deceased's house, the body is laid in it, and the hole then filled up with earth.

Men who are Tari or higher, are buried in a kind of chamber, excavated beneath their house. A pit of over 6 feet deep is dug about 15 feet to 20 feet from the house; from the bottom of this pit a horizontal passage is dug beneath the ground leading towards the house. This passage is low, and a man has to stoop to walk along it. It goes under the wall of the house, and is continued till a spot is reached, which is judged to be more or less centrally under the floor. The corpse is let down into the pit and brought along the passage to the kind of chamber which has been made at

the end of it. After the corpse has been placed in position the passage is blocked at three or four places along its length by sticks placed across it.

That night, when it is quite dark, the son of the deceased goes down the pit and makes his way along the passage, removing as he goes, the obstructions which were placed in it, until he reaches the body of his father. Arrived there, he places his big toenail against the big toenail of his father, and waits. If the latter thrusts the son's toe away the son flees the place and comes up out of the pit at once. This is a bad omen, for it means that he will live only a short time, perhaps six months. If, however, the father does not do this the living man puts his ear down close to the mouth of the corpse and listens. If the father then breathes, or, as Rovsali expressed it, if the son hears a wind coming out of the mouth it is good and the son will live for a long time. Rovsali thought, but was not sure, that the father tells the son something. This performance is repeated by each of the deceased's sons, and in the morning the passage is finally blocked up and the pit filled in with earth.

There is no record of any beliefs concerning the fate of the spirits of the dead or of the Land of the Dead.

Beliefs Concerning the Being Tautai, or So'o.

Tautai, or So'o, lives in the sky. He is very great, greater than any chief of even the highest grade ("more big Liwusi"). When a child is still in the womb he comes down, and with a sharp bamboo cuts open its fingers, mouth, ears, eyes, etc.* When Tautai had cut the fingers apart as far as they are now separated, he stopped, since the child was bleeding too much. Tautai made all edible things, he made the land, "he make all things belong this world." He had no wife,† but he had a child called Sari. Whether Sari were a boy or a girl Rovsali did not know, but replied on being questioned, "Old man, he savvy long that thing."

Formerly, in the time of Rovsali's father or grandfather, a man would look out in the morning and see that there was no wind. Then he would go up and build up a heap of stones, some 4 feet to 5 feet high, Rovsali thought, and put earth on top to make it level. He would then take a young pig, "he greasy, he good kaikai," and kill it by cutting it open transversely across the upper abdomen.‡ He then lights a fire underneath it and burns it, so that "smoke, he go straight, straight long sky, long Tautai." The man does not eat the pig, it is just burnt, and as it burns the man says something, but what Rovsali did not know. When the pig's carcase is reduced to ashes the man goes away, leaving the heap of stones as he built them up.

* Rovsali told Deacon all this spontaneously. It confirms remarkably Nau's account of Yetar, who cuts a child's fingers, etc., before birth in exactly the same way. (*See* "The Sakau Peninsula; The Story of Yetar.)—[A. B. D.]

† The idea that Tautai had a wife appeared preposterous to Rovsali.—[A. B. D.]

‡ Note that this is quite unlike the ordinary method of slaughtering pigs, which is to kill them by a blow from a club or heavy stick.—[C. H. W.]

The Graded Society.

The grade system, which exists in this district also, is here called *mele* (= cycas). Before a man has taken any grade he is termed *ulaeu*, or "small boy." There are six grades in all, having the following names :—

(1) Mala (= a hawk which kills fowls).
(2) Paka (= the banyan tree).
(3) Karai.
(4) Tari.
(5) Moli (= the orange tree).
(6) Liwusi.

These grades fall into two groups. The ceremony for entering the first three is not very elaborate nor is the cost very great, and membership is always purchased from the mother's brother, who distributes the pigs among the members of his own village.* For the three upper grades the ritual is elaborate and involves, among other things, the erection of a stone table. Moreover, membership is purchased from anyone who is already a member of the grade, not necessarily a relative.

(1) *Mala.*—When a boy (*ulaeu*) wishes to become a member of the Mala grade he gets ten pigs and takes them to his father. The pigs are laid on the ground and the father kills them by a blow on the back of the head with a stick. Then the father gives the pigs to some boy of his own village, other than his own son, who takes them to the mother's brother of the boy who is "making" Mala, and who necessarily belongs to another village. This ends the ceremony, and there is no dance.

(2) *Paka.*—A boy who is Mala and wishes to become Paka gets twenty pigs, which he kills in his father's village. He then takes them to his mother's brother's village and gives them to his mother's brother. The dance called Welu is then performed in this village, and this ends the ceremony.

(3) *Karai.*—A man who is Paka and wants to become Karai, gets 100 pigs and takes them to the village of his mother's brother. Here they are laid on the ground and the mother's brother kills them and distributes them all round, not to anyone in particular. Welu is again danced and so the ceremony ends.

(4) *Tari.*—A man who is Karai and who wishes to become Tari gets a man who knows how (presumably a good "stonemason" merely) to put up for him a stone table (*sua*) on which to kill pigs. This table consists of a stone slab (*sua*), $2\frac{1}{2}$ feet to 3 feet across, resting upon two upright slabs (*kerin sua*) of about 3 feet high. Steps lead up to the top of this table. Whereas in the lower grades the pigs are killed in the village of the mother's brother, in this grade the table on which the pigs are to be killed is erected in the father's village. Round the stone is planted an inner circle of a kind of cane called *arai*† and an outer circle of a dracæna called

* Since membership of a village community is determined through the father, a man and his mother's brother necessarily belong to different villages, though to the same clan. (*See* "Social Organization.")

† This plant is described by Mgr. Doucéré as a "roseau graminée."

tsii.* To the stems of these trees, on the side away from the stone and at a height of about 4 feet or 5 feet from the ground, cycas fronds and a branch of a tree called *vae*† are fastened by means of coconut sinnet, one frond and one branch of *vae* being tied to each *tsii* tree. Between the *tsii* trees a coconut fibre rope is stretched, about 6 feet above the ground, and to this all kinds of red flowers are fastened, to make it "flash." Thus the inner circle of tall cane grass and the outer one of *tsii* trees, planted close together, form a sort of enclosure round the stone. At some place

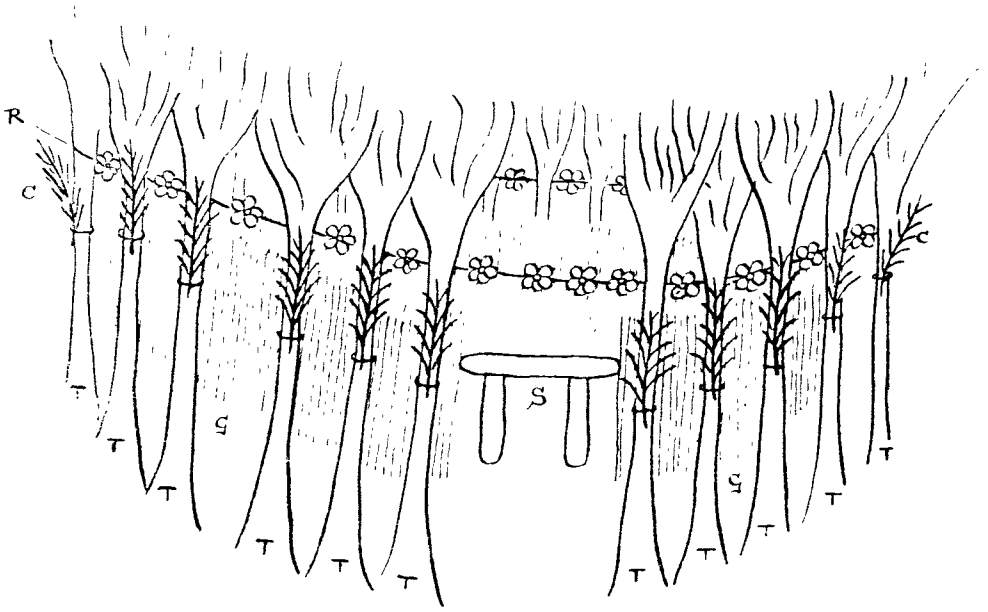


FIG. 5.—REPRODUCTION OF A DRAWING, ENDORSED BY ROVSALI AS BEING A CORRECT REPRESENTATION OF THE ARRANGEMENT OF THE STONE TABLE AND ITS ENCIRCLING FENCES, SET UP AT THE ENTRANCE TO THE TARI GRADE.

S. Stone table.
T, T. Fence of *tsii* trees.
C. C. Cycas fronds fastened to the outside of the *tsii* trees.‡
R. Rope, decorated with red flowers, fastened to the *tsii* trees.
G. Fence of *arae* cane.

on the circumference an opening is left—a "door" Rovsali called it—for entering the enclosure. This is made by omitting one or two *tsii* trees and a corresponding length in the cane circle: the rope with the red flowers is, however, continuous, passing across the opening and forming, so to speak, the "lintel" of the "door."

* *Tsii*, this is a variety of dracæna. The Melanesian word for this plant in the New Hebrides is generally some form of the word *tii* or *tsii*. The leaves of this variety are not striped, but are of a uniform green with yellow patches on the older leaves. (Information kindly supplied by Mgr. Doucéré.)

† This plant has been identified by Mgr. Doucéré as the *Hibiscus tiliaceus*. The flower is a big yellow one, not red.

‡ The branches of *vae* are not represented in this drawing.—[C. H. W.]

(*See* Fig. 5.) There does not appear to be any rule as to the orientation of the stone table relative to this opening. Rovsali thought that the "door" was made just where it would be most convenient.

The enclosure thus formed is entered only by the man making the rise in rank, his father, and any men who are already members of the rank which the candidate is entering, and who may care to witness the ceremony. All the other people who have assembled for the feast (*mele*) must remain outside. It is for this reason that the cycas fronds and *vae* branches are fixed to the outside of the *tsii* trees; they are symbols of taboo and must therefore be seen by the people without. The red flowers are also put outside so that the onlookers may see how "flash" it is.

For this occasion a fence built of sticks (Rovsali did not know of what kind) is set up round the whole village. In this fence four openings or "doors" are left, and these are protected by a cycas leaf set up on either side of them, the cycas being the sign of taboo. The general plan of the village on this occasion is represented in Fig. 6, which was drawn by Deacon under the direction of Rovsali, who could not be persuaded to attempt a drawing himself.*

Having found someone to make the stone table for him the man who is intending to "make" Tari arranges with some person, who is already a member of this grade, to receive pigs from him for the purchase of membership. The necessary number for the grade Tari is 300. Rovsali said that this man was chosen quite freely; the candidate selected a man who was Tari and who was his friend, and arranged with him to have the feast (*mele*), and so make the rise in rank. If, however, this man later attained to the rank Moli, then, should the candidate who chose him to receive the purchase-pigs for Tari subsequently desire to become Moli also, he would again select this man as his introducer to the new rank. Rovsali pointed out that whatever man of the rank which the candidate wished to enter was chosen, it made no difference, since he always distributed the pigs which were paid him to the other members of the grade.

The candidate having selected his man, the day for the killing of the pigs is fixed. On the evening before this day the dance Welu is begun at about 5 or 6 o'clock, and it is danced continuously until 6 o'clock the next morning. The pig-killing then takes place at about 3 o'clock in the afternoon. The pigs are laid out in rows in the village dancing-ground (*see* Fig. 6) with their fore-feet tied together and their hind-feet tied together, and in addition they are encircled with a string of beads. The man who is "buying" the grade stands on the lowest step of the ladder leading up to the stone table, his father on the top one or on the table itself. The son then takes each pig in turn and hands it up to his father, who kills it on the stone table. The killing is done by a blow from a stick, which is painted various

* Deacon began to draw the houses rectangular, but Rovsali corrected him and said that they were round. Mr. Adam, Condominium Agent, confirmed this for the Tismulun district.

colours—red, blue, yellow, green, etc. The dead pig is then carried out of the enclosed village through one of the openings in the fence, and all the slaughtered pigs are laid in a row. These pigs are never actually given to the man from whom Tari is being bought, but when they have been killed by the candidate's father and carried out it is recognized that they belong to this man

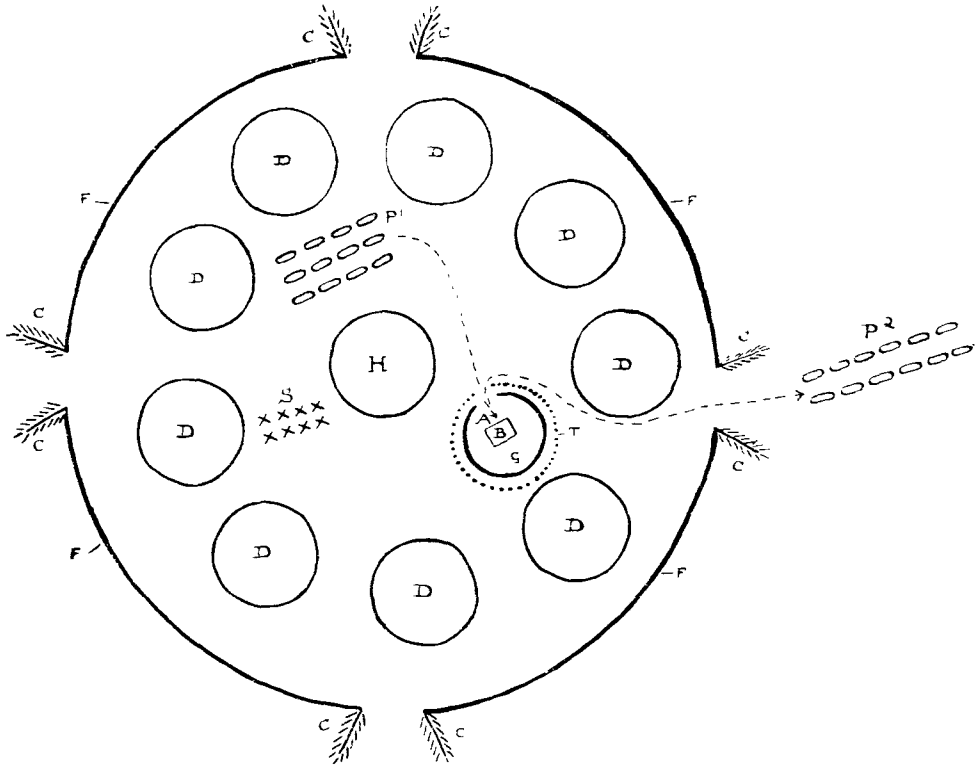


FIG 6.—DIAGRAMMATIC SKETCH OF THE ARRANGEMENT OF THE VILLAGE, WHEN A MAN IS ENTERING THE TARI GRADE. ENDORSED AS CORRECT BY ROVSALI.

A. The candidate standing at the lowest step leading up to the stone table
B. His father, standing on the highest step or on the stone table itself.
G. Screen of *arus* cane.
T. Screen of decorated *tsib* trees.
D. Dwelling houses of the village.
H. The house built for taking the Tari grade (not mentioned in the text).
F. The fence surrounding the village.
C, C. Cycas fronds guarding the four entrances to the village.
S. The spectators.
P¹. The pigs with their feet tied together (later killed on the stone table).
P². The slaughtered pigs laid outside the village.

When the pig-killing is finished the pigs are distributed. Rovsali could not say exactly to whom, but apparently to those who were already members of the grade Tari. After this Welu is danced continuously until about 8 o'clock in the evening, when the *mele* terminates.

Concerning the two highest grades Rovsali knew little, for they are the ranks of great chiefs, far above anything to which he could aspire, and he had not, therefore, had the opportunity of witnessing the ceremonies connected with them. Some information, however, he did give.

(5) *Moli.*—The preparations for rising from Tari to Moli are the same as those for entering Tari, but, instead of the circle of *arae* cane, the stone table is surrounded by an inner circle of orange trees (*moli*), the outer one being, as before, of *tsii* trees, decorated in the same way. For this grade, too, 500 pigs are killed. Welu is danced as for Tari.

(6) *Liwusi.*—The preparations are again the same as for Tari and Moli, but there is no record as to the material used for the inner circle surrounding the stone table. On this occasion 1,000 pigs are killed.*

Members of the different grades are differentiated in various ways. Men who are Paka or of a higher grade may only eat male pigs, the sow being taboo to them, while those who are only Mala may eat sows; women eat sows only. The disposal of the dead, too, differs for those of the higher and those of the lower grades. For members of all grades up to and including Karai, burial in a hole at some distance from the house is the rule, while for those of the three higher grades a chamber is excavated beneath the house of the deceased and certain special ceremonies are performed. (*See* "Death and the Disposal of the Dead.") A man, too, of Moli or Liwusi rank is in the position of a "chief," comparable to that of a member of Westele in the graded society of the Sakau Peninsula. He has the right and power to place a taboo upon anything by fixing to it a cycas frond and a *vae*-tree branch. In this way he will taboo the coconuts before a big *mele* or feast and sometimes also on other occasions.

Finally in the dances at *mele* ceremonies the different grades are distinguished by their characteristic decoration of face, hair, etc., and the distinctive ornaments which their members wear. These are as follows:—

(1) *Mala.*—For this rank there is no painting and no ornaments of any kind except for a few wisps of grass.

(2) *Paka.*—A circle of green surrounded by a circle of blue is painted round the right eye. In addition a cycas frond is split down the centre, and one half is bound about the forehead and sides of the head, so that the leaves of the frond form a horizontal fringe round the head, like the brim of a hat.

* In reply to a letter from Dr. Haddon, commenting upon the large number of pigs which are said to be killed on the occasion of a rise in rank in the graded societies of the Northern New Hebrides, Deacon wrote: "With regard to the number of pigs, they probably are excessive. Theory and practice often differ. I find here a native describing ceremonial will almost invariably add descriptions of what ought to have been done for 'style,' but what was actually omitted for economy, etc. Thus, a man entering a Nimangi grade should pay pigs for innumerable objects necessary for this rank. In practice a great many of these would be omitted owing to the cost. A man does sometimes go bankrupt in the middle of a Nimangi, to his shame. Certainly pigs do run into smaller hundreds at times."

(3) *Karai.*—A white fowl's feather is stuck in the hair in the front and bent backwards, and a cycas leaf is thrust into the belt at the man's back.

(4) *Tari.*—A cycas leaf is stuck in the belt in the middle of the back and the feathers of a white pigeon (*lulu*) which kills rats is placed in the hair at the back.

(5) *Moli.*—Two fowls' feathers painted red are stuck into the hair on either side of the forehead, in such a manner as to project forward: another large white feather is thrust upright in the hair in the centre of the head. A man who is Moli wears also a pig's tusk on the (?) right arm, and on the left an ornament called *panpan*. This *panpan* is a kind of armlet or leg-band which is woven in zigzag designs of a special rope which looks exactly like coconut sinnet, but is apparently made from a special plant which is found in Santo, but which Rovsali said he had not seen near Vila. The ornament is about $3\frac{1}{2}$ inches deep and goes right round the limb like a cuff or garter.*

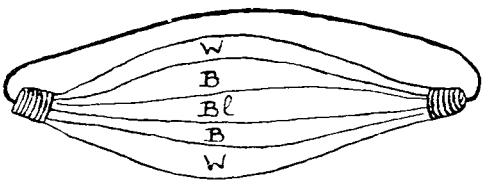


FIG. 7.—DIAGRAMMATIC SKETCH OF A "WUNUWARI," OR HEAD-BAND OF COCONUT SINNET, WORN BY MEN OF LIWUSI RANK. W. = WHITE; B. = BLACK; BL. = BLUE.

(6) *Liwusi.*—A member of this grade wears a *panpan* on the upper part of the right arm and on the calf of the left leg; he also wears two pigs' tusks on his arms, but he has no feathers in his hair. About his head is a band called *wunuwari*, woven of coconut sinnet and decorated with horizontal bands of white, black, and blue; this decorated portion coming over the forehead. (*See* Fig. 7.)

Reviewing what has been found out about these three districts, Nogugu, Tasmant, and Tismulun, it is evident that the west and south-west of Santo, from north of Nogugu to east of Tismulun, form one culture area, which is characterized by the following:—

(1) A social organization based upon matrilineal "lines" or descent groups, forming a dual organization in the north and passing to clan exogamy in the south, where the clans each "belong" to a certain locality after which they are named: as, for instance, in Tismulun, the clan Lasurwai after the village Lasurwai. Marriage with the widow of the mother's brother is also probably typical of this region.

* When shown the drawings of the two Malekulan effigies in the Melbourne Museum, Rovsali said that the armlets and leg-bands of these were *panpan* and like the *panpan* of the Moli and Liwusi grades in Santo. Actually, these armlets and leg-bands on the effigies are connected with the rank acquired by the deceased whose effigy it is, in the two secret societies of the South West Bay district.

(2) A grade system in which the following ranks occur :—

(*a*) Tsura (or Uluwu—probably the name used between children of the men of the same rank, as, for instance, *Uluu gina* = my *uluu* in Nogugu).

(*b*) Mala (= a hawk).*

(*c*) Karai.*

(*d*) Tari (=(?) Tor).

(*e*) Moli (= orange-tree), with possibly a cult of the orange tree.

(*f*) Liwusi (equivalent to a high chief).

Further, the erection of a stone table† which the man entering the grade ascends and on which he kills the pigs; the dancing of Welu round a fire, and the making of a new fire are elements in the ceremony of rise of rank in all three districts. The badges (*panpan*), the painted head-band, and the prominence of the colour blue as badges of the highest grades are common to Nogugu and Tismulun, though they are not recorded from the intermediate district of Tasmant.

(3) Finally, there is the use of the cycas-frond and the branch of *Hibiscus tiliaceus* bound together as a token of taboo: the prominence of the cycas in the ceremonial rise in rank, and, in Nogugu and Tismulun, the intimate association between cycas, stone-work and "chiefs."

To this same cultural area should probably be allotted South Santo, Malo and the Small Islands, for at Malo there is the grade Moli, and pigs are killed on stone tables.

OMBA (AOBA).

Omba may be divided into East and West by a line running from Laoni on the north coast to some point in the uninhabited area on the south coast, west of Lolokaro district.

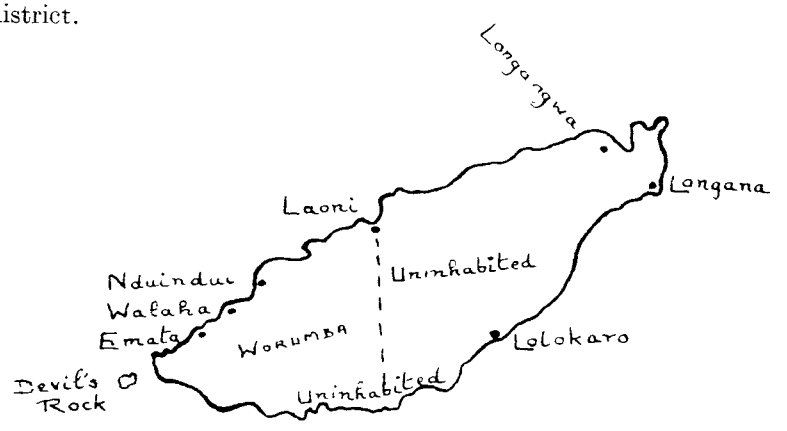


FIG. 8.—SKETCH-MAP OF OMBA, SHOWING THE DIVISION BETWEEN THE EASTERN AND THE WESTERN CULTURES.

* This is not recorded as a grade in Tasmant.—[C. H. W.]

† Only done for entrance to the lowest grade in the Tasmant district.—[C. H. W.]

The people inhabiting West Omba are called Worumba and differ physically from those of the East section. They are very light-skinned, distinctly yellowish in pigmentation, with thick lips, flat faces and a kind of oblique eye. Some of them strongly resemble Chinese. They are the "light-skinned Ombans" frequently referred to.

In the East section two types appear to be present: firstly, a woolly-haired, short, thick-set type, with a broad, low nose; secondly, a distinctly curly or crimpy-haired type, with a thin aquiline, high-bridged nose and thin lips.

The elaborate tattooing of the women is especially found in the East between Lovui Matui and Longana, such women being known as *buri*. Its greatest development is at Longana, where nearly all the women are *buri*. The whole body is covered from the knees to the neck, in squares, diamonds and chain designs resembling lace. For women who are *buri* a higher bride-price is paid than for those who are not tattooed.

In the Longangwa village area of North-East Omba are found remains of ancient irrigation works. In the mountains above here are three lakes (one of these is frequently dry, the other two being permanent), from which canals lead to long banked-up terraces. It is interesting that the chiefs of Longangwa were regarded as the great chiefs of the island: from Longangwa was drawn the "kings" of Omba, who was a kind of super-chief, ranking above the other district chiefs.

In this Eastern district, too, cannibalism reached its highest degree of development; women were specially fattened for eating, the breasts being the great delicacy. It differed radically from that in Malekula, where the motive is principally revenge and glory, and where women were not eaten. The last chief of Longangwa was an especially famous cannibal connoisseur.

The dual organization and a three-clan organization are the two forms present in Omba: of their distribution I am uncertain. It seems that the moieties have totemic animals, concerning which they observe taboos.

The dress of the men is the *malmal*, a kind of mat passed between the legs, tucked into the belt at the back and allowed to fall down like an apron in front.

The dress of the women is a mat wound round the waist. In the district of Nduindui, however, the mat is worn around the middle of the buttocks, as is done in Malekula: but whereas in the latter place these mats are decorated by means of white designs on a red ground, in Nduindui the designs are in red on a white ground.

There is no record of the ways in which the Ombans dispose of their dead, but it is said that in 1903 a Chinaman died, and that his body was laid upon a platform and a fire was lighted underneath in order to preserve the body by desiccation

There appears to be a close relation between the East Omban culture and that of North-West Santo. Men there wear the same dress (the *malmal*), though it is allowed to hang down at the back as well as at the front. The languages are so similar that the East Ombans can understand the North-West Santo people. The social organization of North-West Santo is based upon the dual organization, and,

finally, irrigation is also present there. (This is the only place in Santo where it is found.) It is interesting that the only places where irrigation is practised, or where we have evidence of its having been practised formerly, namely, North-West Santo, North-East Omba, North Raga and Maewo, are within the area of the dual organization.

In many ways the Ombans are much more refined than natives of other groups. Thus, in eating, they do not handle food with their fingers, but pick it up in a leaf: they never fail to bathe daily and are quite scrupulously clean.

The carrying of objects on the head, balancing them without holding them, is very characteristic of the Ombans. Omban servants will carry jugs, tureens and dishes on their heads quite securely, even though they may be doing something with their hands at the same time.

Brother and sister avoidance is very, very strong, so strong that it is impossible to recruit them together, or have both working on a plantation at the same time, and the most terrible thing that you can say to a man is that he has married, or wishes to marry, his sister.

The Graded Society.

The following notes about the grade system at Omba were obtained from an Omban boy.

In Omba the highest grades are called Moli and Liwuhi. The grade system and the ceremonies connected with it are called *hungwe*. The dance performed at the ceremony of the rise of rank is called *hakwan*.* Head-dresses resembling masks (called *hahale*), are worn and the faces of the dancers are painted various colours. When practising the dance the men may not be seen by the women.

Men of Moli and Liwuhi rank wear an object call *ban* or *banban* on the calf of the leg and on the arm. This is said to be the same as the *panpan*† in Santo (which the informant had seen). A head-band called *folorai* is worn across the forehead: this corresponds to the *wunawuri* and *osporgetsa* of Santo.‡

At entrance to Moli a pig is hoisted up into a cycas tree and killed on the tree. At the entrance to Liwuhi twenty stakes are driven into the ground in a line, and to each stake is bound (1) A *mele* leaf (cycas), (2) a croton branch, (3) a yucca leaf. A pig is tied to each stake and killed in turn. At entrance to this grade, too, a stone "tower" is set up, on top of which is placed a canoe with a mat sail (like those used on the canoes of North Malekula). One pig only is killed on this tower.

* The *h* of Omba corresponds to the *s* of Pentecost. Thus *hakwan* (Omba) corresponds almost certainly to the *saran* of Pentecost, and *hungwe* (Omba) to *kukwe* or *sukwe* of the Banks Isles.—[A. B. D.]

† *See* above, notes on Santo.

‡ Another note on Omba runs: "Green and red parakeet feathers are used for elaborate head-dresses for *nakai* dances; also arms-bands made of parakeet feathers. In the *nakai* dance they have disguises completely covering the wearer." What the *nakai* dances are or whether they are connected with the *hungwe* is not mentioned.—[C. H. W.]

and this pig is then burnt and not eaten. This setting up of the canoe on the stone and the killing of the pig thereon, is to commemorate the coming of the first pigs of the *hungwe* from Malo to Omba. The identity of the grade names in Omba and Malo and the evidence of the canoe set up on the stone for pig-killing, make it almost certain that the *hungwe* of Omba and, therefore, probably the *sukwe* of the Banks Islands came from Malo, as probably the *mele* of West and South Santo did also.

EPI.

Social Organization.

Concerning the social organization of Epi, Deacon obtained information on two separate occasions, and the evidence therefrom is rather conflicting. The first of these was when he interviewed Jacob, of Burumba, early in 1926: the second was apparently shortly before his death, and after he had made the discovery of the "six-class system" of Ambrym.

The island of Epi, which lies to the south of Ambrym, may, on the basis of types of kinship-grouping, be divided into four areas. In the south-east the social structure is apparently akin to that of Tongoa and the Shepherd Islands: in the south-west the Voambi district, there is a kinship system whose characteristics would seem to be the classing together of the mother's brother and the mother's brother's son, and of the father's sister's son and the sister's son [m.s.], and which shows no evidence that cross-cousin marriage was habitual: from the north-east the Nekaura district, a kinship-system is recorded which shows some affinities with the six-section system of south-west Ambrym.* The fourth region is in the north-west of the island, and includes the two places from which Deacon got his information—Burumba in the south and Loge village, Ringdove Bay, in the north. From the former there are only the statements of Jacob, from the latter there is a list of kinship terms, with a few rough notes appended to it. It was after collecting this that Deacon wrote to Dr. Haddon: "In Epi, cross-cousin marriage seems to be the rule: the relationship system is in agreement with it and instances occur in the pedigrees. Descent is patrilineal in local village groups."†

The following are the kinship terms which were recorded:—

Term.		*Reciprocal.*	
Grandparents	*Kavua.*	Grandchildren	*Kavua.*
F.	*Kata.*	Children	*Kanarhu.*
M.	*Kawia.*	Children	*Kanarhu.*
F.Sis. [m.s.]	*Simemi.*	B.S. [w.s.]	*Tawienö.*

* For this and other information about these districts of Epi, I am indebted to Professor T. T. Barnard, in that he kindly lent me his abstract of Dr. Rivers' unpublished notes on Epi.—[C. H. W.]

† A. B. Deacon, "The Regulation of Marriage in Ambrym," *J.R.A.I.*, vol. lvii, p. 335.

Term.		*Reciprocal.*	
F.Sis. [w.s.]	*Simemi.*	B.D. [w.s.]	*Kiag miaru.*
M.B.	*Karovwa.*	Sis.Ch. [m.s.]	*Kiag miaru.*
F.Sis.H.	*Karovwa.*	W.B.D. [m.s.]	*Kiag miaru.*
M.B.W. [m.s.]	*Simemi.*	H.Sis.S.	*Tavienõ* or *Kiag miaru.*
M.B.W. [w.s.]	*Simemi.*	H.Sis.D.	*Kiag miaru.*
e & yB. [m.s.]	*Korogila.*	yB. [m.s.]	*Korogila.*
B. [w.s.]	*Komwenagu.*	Sis. [m.s.]	*Kov'nagu.*
eSis. [w.s.]	*Kolwagu.*	ySis. [w.s.]	*Kolwagu.*
F.Sis.S. [m.s.]	*Kiag miaru.*	M.B.S. [m.s.]	*Karovwa.*
F.Sis.S. [w.s.]	*Kocu.*	M.B.D. [m.s.]	*Kocu.*
F.Sis.D. [m.s.]	*Kocu.*	M.B.S. [w.s.]	*Kocu.*
F.Sis.D. [w.s.]	*Kovecu.*	M.B.D. [w.s.]	*Kovecu.*
M.B.D.Ch. [m.s.]	*Kanarhu.*	M.F.Sis.S.	*Kata.*
M.B.D.Ch. [w.s.]	*Kiag miaru.*	M.F.Sis.D.	*Simemi.*
H.	*Kocu.*	W.	*Kocu.*
H.B.	*Kocu.*	B.W. [m.s.]	*Kocu.*
H.Sis.	*Kovecu.*	B.W. [w.s.]	*Kovecu.*
W.B.	*Karovwa.*	Sis H. [m.s.]	*Tavienõ* or *Kiag miaru.*
W.Sis.	*Kocu*	Sis.H. [w.s.]	*Kocu.*
H.F.	*Karovwa.*	S.W. [m.s.]	*Kiag miaru.*
W.F.	*Karovwa.*	D.H. [m.s.]	*Kiag miaru.*
H.M.	*Simemi.*	S.W. [w.s.]	*Kiag miaru.*
W.M.	*Simemi.*	D.H. [w.s.]	*Kiag miaru.*
W.eB.W.	*Korinagu.*	H.ySis.H.	*Komwenagu.*

Of the pedigrees to which Deacon refers only one has been found, but this is sufficient to throw a certain amount of light upon the system of regulating marriage, and is reproduced in the table on p. 502.*

An analysis of the kinship terms shows the system to be one belonging to the "Australian-Dravidian" type, the characteristic of which is the absence of special terms for relatives by marriage, which would seem to imply that marriage normally took place between relatives, real or classificatory. Further, as Deacon pointed out, the grouping of the terms appears to be in accordance with the habitual practice of cross-cousin marriage, as evinced, for instance, by the classing together of mother's brother, father's sister's husband and wife's father: of father's sister, mother's brother's wife, and wife's mother: of mother's father's sister's children, with father and father's sister. A note, running "two lines," written on the rough draft of

* Among Deacon's field-notes a considerable number of rough pedigrees have been found, but unfortunately the locality to which they belong is usually not stated, and it is often impossible to deduce this from internal evidence.

Harry's genealogy, strongly suggests the existence of a dual organization in Loge village, with which these groupings of kinship terms would be entirely in harmony. There are, however, certain anomalies in the terms for cross-cousins, for the spouses of siblings and the siblings of the spouse.

Taking first the terms for cross-cousins. Here we find that, although the term for both female cross-cousins [m.s.] is *kocu*, a distinction is made between the mother's brother's son and the father's sister's son: the former is classed with the mother's brother, the latter with the sister's husband, the sister's son, the daughter's husband and the wife's brother's son. As has already been indicated, the practice of classing mother's brother's son with mother's brother is a characteristic of the kinship system of the Voambi district to the south of Burumba, as is also the grouping together of father's sister's son with the sister's son. It seems probable that it is also significant that the alternative term for sister's husband [m.s.] in use in the Burumba district is *tavienō*, which can only be equivalent to *tariama*, the regular word for sister's husband in Voambi.

Turning in more detail to the terms for affinals we find that the wife's brother is classed with the mother's brother's son, but not with the father's sister's son, while the sister's husband is classed with the latter and not with the former. This suggests at first sight that the marriage regulation is not marriage between cross-cousins, but marriage with the mother's brother's daughter, not with the father's sister's daughter—a modification of the cross-cousin marriage which is found in several other parts of the world. That an asymmetrical form of cross-cousin marriage was the rule is stated by Jacob, but he said that marriage with the father's sister's daughter is permitted while that with the mother's brother's daughter is forbidden. Clearly the kinship terms of Loge village do not support this statement as it stands, but it is possibly permissible to suppose that, in the brief and hurried interview that he had with Jacob, Deacon confused the cousins between whom marriage might and might not take place. There are, however, several points which make it improbable that in Loge village, at least, any distinction for marriage purposes was recognized between the two kinds of cross-cousins.

In the first place all cross-cousins of the opposite sex are called *kocu*, and the terms for sister [m.s.] and wife's brother's wife are clearly the same, and so also are those for sister's children and wife's brother's children, and these, again, are the same as those for daughter's husband and son's wife. Secondly, we have the following brief but distinct statement concerning marriage rules in this region: "A man can only marry a woman whom he calls *kocu*, and this is said to be always a cross-cousin in the classificatory sense." At the same time we are told that fewer pigs are given by the groom in compensation for the bride if she is his cross-cousin, which, since all the available women must be *kocu*, suggests the recognition of a distinction for purposes of marriage between the real and the classificatory relative. Marriage with the mother's brother's widow is forbidden. Further, a man may not

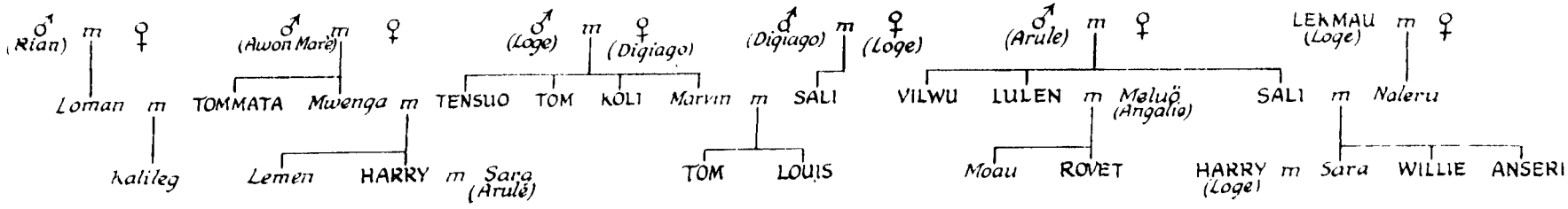
marry any woman of his father's (that is his own) village, but he may marry anyone of his mother's village. The relations between a man and his *kocu* are interesting. In this part of Epi there is no avoidance between brothers and sisters, such as is found in several parts of Melanesia, but there is an avoidance of this nature between those who address each other as *kocu*, that is, cross-cousins of different sex. For instance it was said that Harry (*see* "Genealogy") would not go inside a house where Kalileg (his mother's brother's daughter) was sitting alone, and if he met her on the road he would not speak to her, though he would not deliberately avoid her. This, it was said, was because he called her *kocu*, and that if he married her this would, of course, be changed.

It is true that it is recorded that "a man's marriage is arranged through a mother's brother—the father of the desired girl," but the evidence suggests that the words "a mother's brother" should be regarded as equivalent to "a *kavovwa*," and that no definite distinction is intended between a mother's brother and a (classificatory) father's sister's husband. Further, the avoidance which is normally practised in Melanesia between a man and his wife's parents is here observed between a man and his mother's brother (*kavovwa*) and father's sister (*simemi*), under which titles as we have already seen, the wife's parents are classed. Thus, a man may not go near his father's sister, nor enter a house where she is alone. He cannot pass behind her back, nor take anything from above her head. He may not climb a coconut tree in her presence,* nor may he accept food from her. Similarly he may not enter his mother's brother's house, accept food from him, pass behind his back, take anything from above his head, climb a coconut tree in his presence, take his property, etc.

Finally, it is clear from the evidence of Harry's genealogy that to-day, at least, no difference is recognized for purposes of marriage between the two kinds of cross-cousins, for we find that Harry married his father's sister's (classificatory) daughter, Sara, and that Sali marries Marvin, who is both his mother's brother's and his father's sister's daughter.

The evidence of this genealogy and the note "two lines" which accompanies it, make another important point clear. According to Jacob, Burumba district is divided up into a number of patrilineal local groups, such that a man, his father, his father's father, his father's sister, etc., belong to a single group. Such a local group is called *tara*, and this is the most significant unit in the social structure. The *tara* is exogamous; land is owned individually, but that belonging to all men of a given *tara* is together in one place, that belonging to men of another *tara* all together in another place. In Harry's genealogy people from six different villages, or *tara*,

* It seems from Deacon's notes on Malekula, that the reason for this prohibition is lest the climber should expose his genitals to the view of the person on the ground.—[C. H. W.]



GENEALOGY OF HARRY OF LOGE VILLAGE, EPI ISLAND.

are represented, and, taking the hint from the note "two 'lines,'" we find that these *tara* can be divided into two groups of three each: in the one we get Rian, Loge and Angalie: in the other Awon Maré, Arule and Digiago. That we are justified in recognizing such a dual grouping is suggested also by the fact that Harry uses towards people who are not of his father's or his mother's village, kinship terms which would belong only to people of these two villages, did each village form a distinct kinship unit. Thus he addresses Melüo as *simemi*, Moau as *kocu*, and Rovet as *kiag miaru*. Melüo belongs to the village Angalie, with which Harry is not apparently connected, but if we take it that Angalie and Loge belong to the same moiety, then Melüo can be regarded as the sister of Harry's father, and Rovet and Moau will fall into place as *kiag miaru* and *kocu* (father's sister's son and daughter) respectively. On this theory then Lulen of Arule, Melüo's husband would, classificatorily speaking, be Harry's mother's brother. Unfortunately, there is no record of what term Harry uses towards him, which might explain why Rovet is called *kiag miaru* rather than *kavovua* (mother's brother's son), but we do know that Harry marries Sara, who is, classificatorily, the daughter of Lulen.

It would seem, therefore, that we have in this north-west district of Epi, an organization based on the dual division, with patrilineal descent in the moieties, and each moiety subdivided into a number of patrilineal, exogamous, non-totemic* descent-groups or clans: that marriage with either of the cross-cousins is the rule, and that the kinship terms have a range which includes not only people belonging to the villages of a man's own parents, but also all other of their respective moieties. Further, that the terms themselves, while clearly reflecting the habitual practice of cross-cousin marriage, show certain anomalous features, somewhat akin to the Voambi district kinship system, the significance of which can only be elucidated by a more detailed examination of the mutual rights and duties of relatives in the Burumba district than Deacon has left on record.

The Graded Society.

The grade system, common in the New Hebrides, is found in Epi. The following is an account of it obtained from Jacob, an old "chief" at Burumba, West Epi. This area has been Christian for many years, and practically all the old customs have gone. Jacob is almost the last of the old men at Burumba.

A long time ago, when Jacob was a boy, men used to kill pigs, make a new fire and take a new name. This was called *megi*, and was "all same" as the *mange*

* On Harry's genealogy is the simple statement, "No Totemism."—[C. H. W.]

of Ambrym. (Jacob had been to Ambrym and to East Malekula.) The grade-names of the *megi* of West Epi were :—

(0) Barang Susu (*susu* = teats).*
(1) Barang.
(2) Barang Nati
(3) Tambat.
(4) Tambat Leru.
–
– –
(?) Mal.
(?) Meleun.

Jacob said that there were other grades, especially between Tambat Leru and Mal, whose names he could not remember.

At the ceremony of rise in rank, tuskers (with artificially produced curved tusks) were killed in the following manner: Trees, called *brutga*, were planted in a circle, and to each tree a pig was fastened. The pigs were then killed in turn by clubbing on the forehead, conches (*smendua*) being blown while the killing was proceeding. A new fire was then made in the *gomah* or men's house. This house contained a number of fireplaces at intervals along its length, one fire for each grade. These fires were known as *sembi lu* (*sembi* meaning fire and *lu* being equivalent to taboo). At the ceremony of rise in rank the candidate made a new fire in the compartment of the grade which he was entering. Images of human form (made perhaps out of tree-fern) called *tavara*, were set up for the ceremony, and a dance called *tyi* was danced. These images, according to Jacob, were the same as the *temes* which he saw when he was in Malekula. The image was made for the candidate by some other older man: it might be his father. To this man he gave pigs in return for his services.

Men of high rank, Mal or Meleun, wore an armlet called *bara mbin* on the right arm, the length of the armlet indicating the grade: the longer it was the higher was the rank of the wearer. On the calf of the right leg a similar object called *mbin* was worn. This, said Jacob, was the same as the *nambin* which he saw worn at Atchin.

Each grade had a characteristic face-painting. Men who were Meleun painted the right half of the face red, the left half black: those who were Tambat painted a red streak on the right side, from the ear across the cheek to the corner of the lip and a corresponding black streak on the left side of the face, with a further black streak from the middle of the top of the forehead, down the nose to the mouth. Jacob said that there were more designs for the other grades, but that he had forgotten them. Men used to paint their faces according to their grade, for the dance *tyi*.

The images (*tavara*) set up at entrance to a grade were erected behind the *gomah*, that is, behind the end where the highest grade had its compartment, so that

* By analogy with other list of grades in the other islands, it is probably safe to assume that the term *Barang Susu*, which is marked with the figure 0, is used for all those who have not yet entered the trade system, and that Barang is the first rank to be purchased.—[C. H. W.]

they should not be seen by the women. This place was *lu*, or sacred. The images had very large penes, strapped up to one side, as in Malekula. No stones were set up round or in front of the *tavuru*. Jacob knew of the South Malekulan practice of omitting the penis from the image and representing it by a stone set up before the image, but said that this was never done in Epi.* Nor were stone circles, such as he had seen in Malekula, ever set up around the image. Nothing now remains of the old *qomali* of Burumba save two posts.

Kava (called *mingou*) was drunk at feasts and at the pig-killing for the rise of rank.

"Chiefs," that is men of Mal or Meleun rank, had, besides their distinctive ornaments, certain privileges. If a "chief" wished to make any object *lu* (taboo), so that no one could touch it, he took a frond of *mamal* (cycas) and a branch of *mbumbwa* (a croton with large green leaves), bound these together and put them on the object. If a chief took a *mbumbwa* branch, and, holding it up, touched his head with it, and then threw it on the ground, he was himself *lu;* no one might fight him, and, for his part, it indicated that he would fight no one, that he desired peace.

When a "chief" died he was wrapped in mats and buried in a grave, together with his armlets, pigs' tusks, and all the other insignia of his rank in the Megi, and also his spear. Before the body was buried it was brought out of the house and placed on the ground. All the people of his own and neighbouring villages came and cried over it. As each passed by he stuck a *mbumbwa* branch in the ground near the body. This expressed symbolically the idea that the chief would fight no more, that he was now, for the last time and for ever *lu;* "Chief he fight no more spirit belong him he *lu*, all time." or words to that effect, was Jacob's expression.

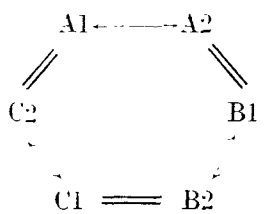
* This information was posted to Dr. Haddon in January, 1926, before Deacon had made his intensive study of the graded societies of South-West Malekula. It is possible that this reference to the stone set up to represent the penis of the stone image in Malekula was based upon information obtained from Layard, for among Deacon's detailed notes on the Nimanki of South-West Malekula there is the following passage: "For the Namu grade, an upright monolith . . . carved with a complete human figure, the hands, with fingers carved separately, coming together near the genitals, which were also represented, is set up . . . This monolith, called *nevet nambar*, serves as the front centre post of a small model (*amel*), which is built round it. . . . Stretching away in a line in front of this *amel* are planted a small number of monoliths, two to three feet high. These monoliths are called *nousun* (penises) *nevet*. This designation is apparently jocular, the upright stone suggesting an erected penis. According to Layard, the *nousun nevet* supplies the deficiency of the "*times*" (here it would be the figure on the *nevet nambar*), which Layard says lacks a penis. But I have been repeatedly assured that the *nevet nambar* has a penis when they trouble to carve it: that when the penis is absent it is on account of the difficulty of carving a "projection": and that *nousun* is merely a jocular way of referring to these monoliths, which has become current through frequent use. Moreover, each stone in the row of monoliths is called a *nousun*, so that if Layard's suggestion be true the figure must lack quite a number of penises."

Jacob's voice and gestures indicated clearly.' I think, the awe and solemnity of this final rite.

All the dead, of whatever rank, go to a place called Levru or Levuru, on Lamman Island, which lies off the north-east point of Epi. From this island the Megi came to Epi, and it came to Lamman Island from Malekula. That was what the old men said when Jacob was young.*

PAAMA ISLAND.

The island of Paama lies between Ambrym and Epi. From here Deacon obtained a list of kinship terms, but there is no trace of any notes or comments upon these, nor can any of the pedigrees found among the field-notes be identified as coming from here. The list is also in many ways seriously incomplete: among the terms used by a man those for mother's brother's wife, wife, wife's sister, wife's brother's wife, brother's children, and father's sister's daughter's husband are lacking: while amongst the terms used by a woman there are none recorded for mother's brother's wife, husband's sister's children, mother's mother's brother's children, husband's sister, sister's husband, husband's sister's husband, father's sister's daughter and mother's brother's daughter, and the term for brother's wife is very tentative.† Nevertheless, as the genealogical arrangement of the terms shows (*see* p. 507), the social organization of Paama is based upon a system of six marriage sections, similar to those of Balap in South-West Ambrym.‡ If the regulation of marriage is represented by the diagram:—

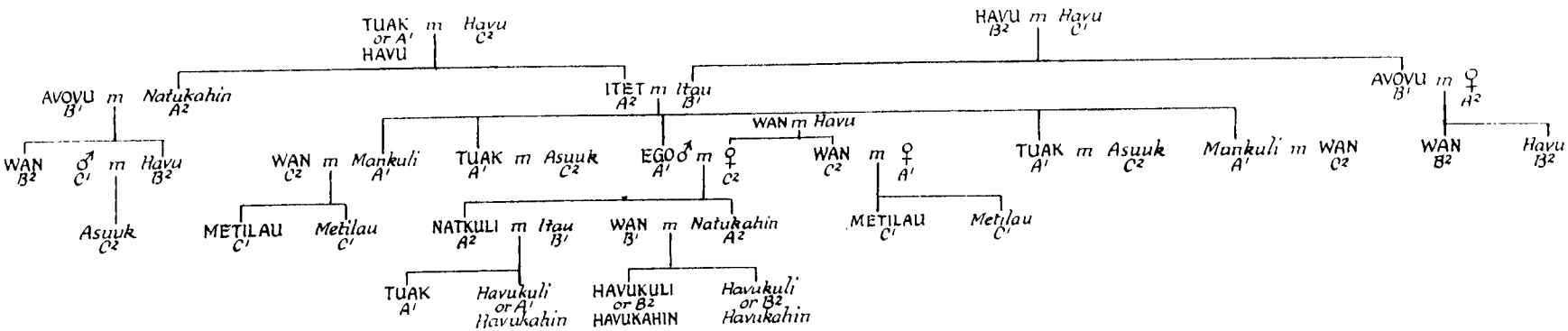


where ←— denotes the relationship between a father and his children, then the kinship terms may be grouped as follows:—

* This information was obtained while the Burns Philp steamer was unloading goods; the time was short, and the interview necessarily hurried.

† Since the term *asuuk* is given for husband's brother and brother's wife [m.s.], it seems very probable that it is also a term used reciprocally between husband and wife. This is substantiated by the evidence given by Ray. (*The Melanesian Island Languages*, pp. 316–17.)—[C. H. W.]

‡ *Cf.* A. B. Deacon, "The Regulation of Marriage in Ambrym," *J.R.A.I.*, vol. lvii, 1927, p. 325.



GENEALOGY ILLUSTRATING THE USE OF KINSHIP TERMS ON PAAMA ISLAND (WHERE EGO IS MALE).
MEN ARE PRINTED IN CAPITALS, WOMEN IN MINUSCULES.

*Terms Used by a Man of Section A1.**

Tuak, F.F. : S.S. : e & yB.	♂ of A1.
Mankuli, Sis.	♀ of A1.
Itet, F.	♂ of A2.
Natkuli (*Natu ku li*), S.	♂ of A2.
Natukahin (*Natu k ahin*), D.. F.Sis.D.	♀ of A2.
Avovu, M.B. : F.Sis.H.	♂ of B1.
Itau, M. ; S.W.	♀ of B1.
Metilau, Sis.S. ; Sis.D. ; W.B.S.	♂ of C1.
Asuuk, e & yB.W. ; F.Sis.D.D.	♀ of C2.

The following terms refer to relatives who belong to different marriage sections :—

Wau—

F.Sis.S. ; M.B.S.	♂ of B2.
W.F.	♂ of C1.
D.H.	♂ of B1.
Sis.H. : W.B.	♂ of C2.

Hava—

F.M.	♀ of C2.
M.F. : W.M. : M.B.D. ; F.Sis.D.	♀ of B2.
M.M.	♀ of C1.
F.F.	♂ of A1.

Havu ku li—

S.D.	♀ of A1.
D.S. ; D.D.	♀ of B2.

Terms Used by a Woman of Section C2 (the Wife of a Man of A1).

Mankuli, F.F.	♂ of C2.
Ahen Kuli, B.	♂ of C2,
Tuak ahen, e & y Sis.	♀ of C2.

* The terms given here are as Deacon recorded them, some with the first person possessive pronoun, some with the third. The short pronouns used in the singular of the possessive case are : 1. *ku, k, ko* ; 2. *m* ; 3. *n, ne*. Thus we have *tuak* = my brother, *tu na li* = his brother ; *natu k ahin* = my daughter [m. s.], *nati n ahin* = his daughter, etc. (*Cf.* Ray, *Melanesian Island Languages*, p. 317.)

Terms Used by a Woman of Section C2 (the Wife of a Man of A1).—contd.

Itet. F.; B.S.; B.D.	♀ of C1
Avovu, M.B.; F.Sis.H.	♂ of B2.
Itau, M.	♀ of B2.
Nat ku li, S.: H.F.	♂ of A2.
Natu k ahin, D.	♀ of A2.
Asuuk, H.B.	♂ of A1.
Hevu k ahin, eB.W.	♀ of A1.

The following terms refer to relatives who belong to different marriage sections:—

Havu—

M.F.; H.M.	♂ of B1
F.M.	♀ of A1.
M.M.	♀ of A2.
F.F.	♂ of C2.

Havu k ahin—

S.W.	♀ of B1.
B.D.; F.Sis.	♀ of C1.
S.S.; S.D.	♂ of A1.
D.S.; D.D.	♀ of B2.

Havu ku li—

S.S.; S.D.	♀ of A1.
D.S.; D.D.	♀ of B2.
M.B.S.; F.Sis.; D.H.	♂ of B1.

A comparison of the grouping of relatives under this system with that in Balap shows a very general resemblance between the two, with some very interesting differences. There are in Paama three terms, which, as Deacon's informant in Ambrym expressed it, are "not straight," that is, they are used for people who do not all belong to the same marriage section. Of these the terms *havu* and *havu-ku-li*, when used by a man, correspond to *vavu* and *membyug* in Balap, with two noteworthy differences. Firstly, in Paama, the son's son is classed apart from the other grandchildren, and included with the other men of his marriage section as *tuak*; secondly, the sex distinction is recognized between the father's sister's son and father's sister's daughter, and between the mother's brother's son and mother's brother's daughter, the two male cross-cousins being classed as *wan* not *havu*, while in Balap all the cross-cousins are termed *vavu*. The other term which is "not straight,"

wan, has no parallel in Ambrym, for, besides the father's sister's son and mother's brother's son, it includes male relatives by marriage, who, in Ambrym, are classed with the other men of the marriage sections to which they belong. Of those relatives whom, in Ambrym, a man calls *niuk* (a term which there is "not straight"), the father's sister's daughter and wife's mother (also called *vavu* at Balap), are called *havu* only; the father's sister is classed with the daughter as *natu-k-ahin*, both being women of the same section; and for the mother's brother's wife no term is recorded.

When we turn to the terms used by a woman we find similar minor divergencies. The son's son [w.s.] is classed, as at Balap, with the other grandchildren, and there are no terms recorded for the mother's brother's daughter and father's sister's daughter so that we cannot tell whether here, as when a man is speaking, a sex distinction is recognized: but while in Ambrym the father's father [w.s.] is always classed as *vavu* with the other grandparents, in Paama, though he may be called *havu*, he is also called by the special term *man-ku-li*. In Balap the father's sister and brother's daughter are called *niuk*, and the son's wife is called by a separate term *vuguk*: in Paama all these three relatives are included as *havu-k-ahin*, while the mother's brother's son, father's sister's son and daughter's husband, called *vavu* in Ambrym, are here termed *havu-ku-li*. From Ambrym we have no definite statement as to the terms used by a woman for her grandparents other than her father's father, but, by analogy with the terms used for these relatives by a man, it is probable that they are grouped, as they are in Paama, with the father's father and husband's mother.

Apart from these differences the grouping of kindred in Paama, so far as we may judge from so incomplete a list, is almost identical with that in Balap, a slight modification existing in the sex distinction, in Paama, between son and daughter [m.s.] (represented by the male and female suffixes *-li* and *ahin* respectively), which is comparable to that between male and female cross-cousins in this same island.

Yet though the groupings are so similar it is clear that the terms themselves are in several instances quite distinct, as the following comparative list will show:—

Paama.	Balap (S.W. Ambrym).
Tuak [m.s.]	*Kŏnmasian* [m.s.].
Tuak ahen [w.s.]	*Kónmasian* [w.s.].
Asuuk.	*Soğ vaven*.
Avovu.	*Misyuk*.
Itau.	*Nana*.

Even some of those terms which appear to be linguistically related show great divergence in form, as, for instance, Balap *metou*, Paama *metilau*.

A comparison of this list of Paama kinship terms with the notes given in Ray's *Melanesian Island Languages* (p. 316), shows some discrepancies. Ray writes:—"There is no gender. Sex may be distinguished by the words *meahaus*, male, or

ahine, atoale, female, following. . . . Some relationship names are common gender, and the words denoting sex are combined with them. Names of brother and sister have *li, le*, or *lu* added after the pronominal suffix. *James tuen Ioane*, James the brother of John (*tu*, elder brother or sister), *tunali*, his brother, *tumali*, thy sister (to a woman), *tunali ceile*, his brothers: *tunahine*, her sister (*ahi*, younger brother or sister), *ahinale*, her sister, *ahinale ceilu*, his two sisters; *mankuli*, my brother [w.s.] (*man*, brother of a woman), *manmali*, thy brother (to a woman), *manali*, her brother, *manialu*, brother of them two (women): *natkuli*, my son (*natu*, son), *natumali*, thy son; *anatin, natinale*, his son, *natinahine ehat*, his four daughters. *Ihon* with the possessives is used for children: *ihon onaku, ihon onomo, ihon onen, ihon orere*, my, thy, his, their children. *Su* or *so*, husband or wife: *asok, asom, ason* or *asnan, asui*, my, thy, his or her, their husband or wife."

This passage, while throwing some light on the significance of the terms in Deacon's list, differs from it in the terms for siblings. According to Deacon there is no distinction between elder and younger brother and sister, man or woman speaking, and in this Paama resembles Balap. Ray gives *tu* for elder brother [m.s.], and elder sister [w.s.], and *ahi* for younger brother or sister, though his actual examples show the latter to be used by a woman and a man for the sister, and there is none illustrating its use by a man or woman for a brother. The word *mankuli* is also used differently in Ray's and Deacon's lists. In the former it is used by a woman for her brother, in the latter it is used by a woman for her father's father (*ahen kuli* being used for the brother), and by a man for his sister, although in Ambrym the similar word *manakuli* is used by a woman for her brother, the reciprocal being *revenakuli*. The following list summarizes the differences:—

—	Ray.	Deacon.
Elder brother [m.s.]	*tunali* (his).	*tuak* (my).
Younger brother [m.s.]	—— (? *ahine*)	*tuak* (my).
Elder sister [w.s.]	*tunali* (her).	*tuak ahen* (my).
Younger sister [w.s.]	*ahinale* (his).	*tuak ahen* (my).
Brother [w.s.]	*mankuli* (my)	*ahen kuli* (my).
Sister [m.s.]	*ahinale* (his)	*mankuli*.

AMBRYM.

Deacon's discoveries concerning the social organization of the Island of Ambrym have already been published in the *Journ. Roy. Anthrop. Inst.*, vol. lvii, p. 325. It was hoped that a detailed study of his field-notes would throw further light on the rights and duties of relatives in this island, but unfortunately, though two complete genealogies have come to light, one from Ranon in the north and the

other from Toak in the south-east, and though there are other fragmentary genealogies which it is probably accurate to attribute to Ambrym, no explanatory notes have been found, nor does there seem to be much hope of ever finding them. The two complete genealogies are reproduced below, together with such annotations as are on the originals (p. 513).

The following notes about the graded society of Ambrym were, it appears, collected during his stay at Vila from men of Ambrym. They were not written up by Deacon himself, but have been gathered together from the field-notes.—[C. H. W.]

The Graded Society.

The graded society, which is typical of all the northern and central New Hebrides, is known in Ambrym as the *Mangge*. The names of the grades in the *Mangge* were obtained from men of the villages of Lonwolwol, near Dip Point, and Sulol.

At Lonwolwol the grade names are :—

(1) Barang.
(2) Barang Vit (*vit* = stone).
(3) Naim.
(4) Wurwur.
(5) Mweleun.
(6) Lukparo.
(7) Mal.

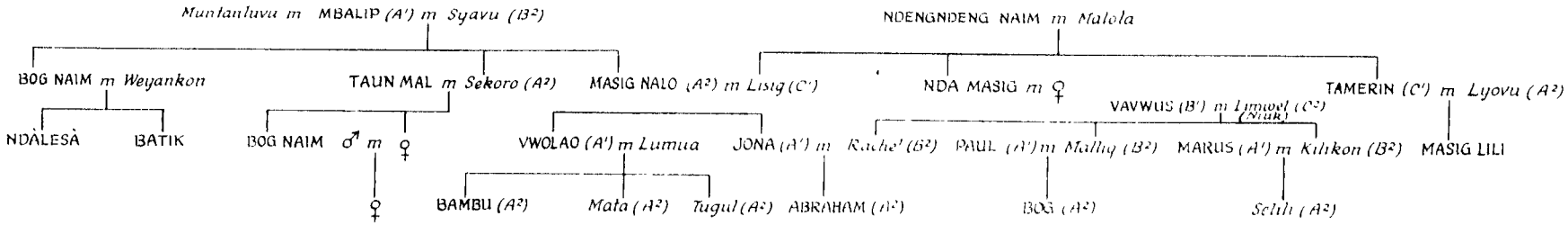
Connected with this society there are three types of masks, called *pato*, *rom* and *gulong*,* which are kept in the *imel* or men's house, and are worn on certain occasions to frighten the women. A man has to pay pigs, the informant did not know to whom, before he can wear one of these masks.

At Sulol village the names of the fourteen different grades were given, some of which, as will be noticed, are the same (allowing for phonetic changes) as those at Lonwolwol. The grades are :—

(1) Ngor.
(2) Potomau.
(3) Mwelip.
(4) Tangop.
(5) Pwerang.
(6) Pwerang Vek.
(7) Sakaran.
(8) Luul.
(9) Wurwur.
(10) Gulgul.
(11) Naim.
(12) Mweleun.
(13) Lukparo.
(14) Mal.

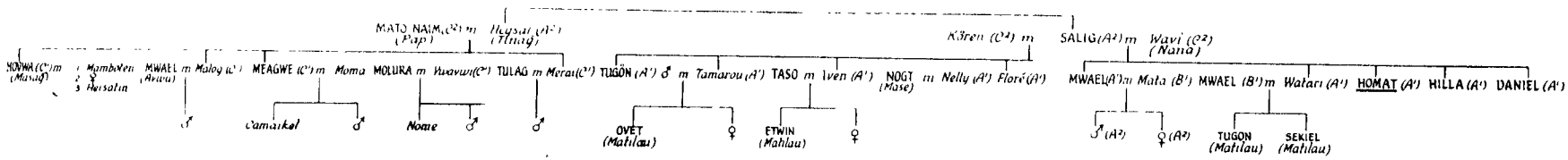
Here, as at Lonwolwol, Mal is the highest grade and Lukparo and Mweleun the two next highest, but whereas at Lonwolwol, Wurwur succeeds Naim, at Sulol it precedes it, and between them is the rank Gulgul. Further, at Sulol, Naim and Mweleun are divided into two sub-ranks. The men's clubhouse is called *imel* at

* There is no statement as to whether these three types of mask belong to any special grades, nor is there any description of them.—C. H. W.



GENEALOGY OF JONA OF RANON, N. AMBRYM.

THE LETTERS AND FIGURES BESIDE THE NAMES DENOTE THE MARRIAGE SECTION TO WHICH THE INDIVIDUAL BELONGS; THE WORDS IN BRACKETS UNDERNEATH THE NAMES DENOTE THE RELATIONSHIP TERMS USED BY JONA IN REFERRING TO THESE PEOPLE.



GENEALOGY OF HOMAT OF TOAK, S.E. AMBRYM.

THE LETTERS AND FIGURES IN BRACKETS DENOTE THE MARRIAGE SECTION TO WHICH THE INDIVIDUAL BELONGS; THE WORDS IN BRACKETS UNDERNEATH THE NAMES OF THE INDIVIDUALS DENOTE THE RELATIONSHIP TERMS USED BY HOMAT IN REFERRING TO THEM.

Sulol as it is at Lonwolwol, but there is no mention of any masks connected with the *Mangge*, which are kept in it.

Throughout Ambrym, it seems, the chief features of the ceremonial of the *Mangge* are the killing of pigs, the assumption by the initiate of a new name, and the making of a new fire. The characteristic of the higher ranks is the setting up of an image in human form, in which, it is believed, the ghost of the father's father comes to reside and care for the welfare of his descendant who is taking the new rank.* The image is covered by a house, or by some structure representing a house.

The full ceremonial attendant upon the rise of rank in the *Mangge* has not been recorded, but the following fragmentary details are interesting. For the rank of Mwelip the candidate kills a pig on the ground by means of clubbing it on the forehead. For Pwerang he makes an image (*tamake*) and erects a platform over it: he then goes up on to this platform and the people throw coconuts and stones at him. For Mweleun a roughly dressed stone is set up and pigs are killed beside it. For Mal the candidate erects stones all round his house (some of which measure as much as two feet high by one foot wide and one foot thick), and pays pigs to the members of Mal.

At the funeral of a man, the rites performed are an almost exact replica of the proceedings which took place when the deceased made his last rise in the *Mangge*.

Concerning the origin of the *Mangge* in Ambrym the evidence is clear. Deacon was told by two informants, whom he brought together, one from Lonwolwol village, Ambrym, the other from Vanbaut village, Port Sandwich, E. Malekula, that this *Mangge* had been introduced into Ambrym from Malekula, and that the ceremonial at entrance to the grades at Lonwolwol is exactly like the ceremonial for the corresponding grades at Vanbaut.

Besides the *Mangge*, the existence of another group of ceremonies, called the *Luan*, was recorded at Sulol. These ceremonies involve the purchase of an image which represents some dead relative of the candidate whose spirit will guard the

* On a loose sheet of paper there is a note to the effect that the image erected for the *Mangge* is called *tamake*, and that no ghost resides in it. There is no evidence to show whether this note is earlier or later than the one which states that the ghost of the father's father resides in the image, but it does seem possible that the latter statement arose from a confusion between the image set up in the higher *Mangge* grades and that erected in connection with the *Luan* (*v.* below), and that the note "No ghost resides in the *Tamake*" is a later correction. The only difficulty in accepting this explanation of the contradictory statements is that in all the notes on the *Luan* it is recorded that the image "represents some dead relative whose spirit will watch over the candidate," whereas in the notes on the *Mangge* the image is said to be the abode of the ghost of one specific relative, the father's father. This is supported by Rivers ("Descent and Ceremonial in Ambrym," *J.R.A.I.*, vol. xlv. p. 230), who, however, does not mention the *Luan* at all, and may have failed to distinguish it from the *Mangge*, which is the only non-indigenous organization mentioned by him.—[C. H. W.]

latter throughout his ceremonial life. It is stated that no one may go into the *imel* or men's house, until he has passed through a *Luan* ceremony. The *Luan* of Ambrym is recognized as corresponding to the *Ruan* of Onua district, E. Malekula, and, according to tradition was introduced from Malekula. It is entirely independent of the *Mangge* organization, but exists side by side with it, just as in S.W. Malekula the graded society of the *Nalawan* co-exists with and is distinct from the graded society of the *Nimanke*.

NOTES ON THE BAAMBA.

[With Plates XLVII–LII.][1]

By E. J. Wayland.

1.—Introduction.

The Baamba, as dealt with in these notes, are a comparatively little-known people living on the northern Semliki[2] plains, and on the north-western foot-hills of Ruwenzori—if one may speak of foot-hills in connection with this mountain. They are essentially forest-folk, and although some of them live on the range, it would appear that they are not a mountain tribe;[3] nor could I find that they claim to have been one at any time. The following notes were collected by me about six years ago, during a visit to the Semliki Valley, and may now be regarded as supplementary to an account of the Bambwa (Bamba or Bwamba) given by the Rev. J. Roscoe (*The Bagesu*, Cambridge, 1924, pp. 147–155). This author writes, almost invariably, in the past tense; I have recorded these notes as I received the information in the present tense.

I had hoped to re-visit the Semliki area and to add to these notes, but circumstances have rendered this impossible, for some time to come at any rate. The information collected by me was in effect checked, and in some measure added to, by the Rev. Archdeacon Lloyd, late of the Church Missionary Society, who, during my absence, kindly questioned for me Baamba folk who had come over the range into Toro proper. Archdeacon Lloyd's enquiries were undertaken without reference to any of my results. The notes, which were not made with a view to publication, are given for the little they may be worth. I claim no special acquaintance with ethnology; moreover, because the time which I could devote to anthropological enquiries was extremely limited, and my visit to the Buamba country was a short one, I considered it desirable to leave several matters untouched till, on some future occasion, I could go into them thoroughly. The principal matters thus postponed are ceremonies connected with birth, burial, secret societies, sowing and harvesting, and rain-making. Indeed, I did not regard my

[1] All these illustrations, with the exception of Pl. XLIX, Fig. 2, and Pl. LII, Fig. 2, are from photographs taken by Mr. A. D. Combe.

[2] Pronounced *Semiliki* by the Baamba.

[3] The Bakonjo, who cultivate alarmingly precipitous slopes up to an altitude of 10,000 feet are essentially the mountain people of Ruwenzori. They are decidedly intelligent and claim that they were driven up from the plains many generations ago by invaders from the north. These, they say, were the original Baganda.

enquiries in the light of a serious scientific investigation. nor was I officially concerned with anthropology; hence the extremely scrappy nature of these notes.

The following nomenclature is here adopted: *Buamba*. the country; *Baamba*. the people; *Kuamba*. the language.

2.—THE COUNTRY.

The Buamba country is bounded on the west by the Semliki River and on the east by the Ruwenzori range. It extends in a north-easterly direction from latitude 0° 22′ N. to 0° 53′ N. approximately. The area is. very roughly. rectangular. and about 50 miles long by 15 miles broad. It lies in the western branch of the Rift Valley and is. for the most part, gently undulating. The rivers. however. run for the greater parts of their courses in very steep-sided gorges cut through soft sediments of late Pliocene or Pleistocene Age. Except in the vicinity of the range. the country is very thickly forested, and oil palms are locally abundant. In the extreme north of the area (at Buranga), at the foot of Ruwenzori. there are boiling saline springs of a "petrifying" nature, the waters of which, when externally applied, are supposed by the natives to cure rheumatism and skin complaints. Most of Buamba lies in the Congo; for the Uganda–Congo boundary runs along the Lamia River which enters Buamba at 0° 36′ N. by 0° 29′ E. approximately; and after making a big sweeping curve to the west. joins the Semliki at about 0° 50′ N. by 0° 30′ E. Buamba, north of the Lamia. falls within the Administrative District of Toro. In the immediate vicinity of the range, which rises with astonishing abruptness from the plain, the country is rocky and boulder-strewn, and the rivers. which during the rains come down as torrents from Ruwenzori. show a marked tendency to swing sharply to the north as they enter Buamba.

There are no Europeans resident in Buamba: but there are a few small mission huts run by natives. Among white folk the country is doubtless best known by certain elephant-hunters.

3.—THE PEOPLE.

(a) *Physical Characteristics.*—As no instrument necessary for obtaining anthropometric data was in the possession of the writer, nothing better than general impressions of the physical constitutions of the natives could be obtained. There can be no doubt that the Baamba are a decidedly short people; some of them indeed are diminutive, but there is much variation in this respect; and one receives the impression (possibly a wrong one) that a large number of measurements would bring out two average heights for either sex, one being short, the other fairly tall. This would appear to be a point worthy of investigation. A tendency to the so-called pigmy-curve of the back is frequently noticeable, but steatopygy is seldom. if ever. very strongly pronounced. Judging by appearances (which may

be deceptive) the Baamba are less long headed than most other tribes of the Protectorate, and thus their physical characteristics, no less than some of their customs (eating snakes, for example), suggest a Negrillo–Bantu fusion.

(b) *Clothing and Adornment.*—Clothing is of the simplest. It consists, in both sexes, of a piece of bark-cloth passed between the thighs and then up, under and over a string or band—a leather thong frequently, but sometimes a belt or chain bought at an Indian *duka* in Toro—and allowed to hang down. In the case of men the part of the cloth that passes between the thighs is commonly allowed to sag (Pl. XLVII, Figs. 1 and 2): this is not so in the case of women, who very generally pass the cloth up over and down to the right at the back (Pl. XLVIII, Figs. 3 and 4). The front flap of a woman's loin cloth is in many instances ornamented by safety pins arranged in chevron pattern, or in a single row at the top. These are greatly prized.

The men wear few ornaments except bracelets of woven grass or of metal; these are worn on the wrists, above the elbow, on the ankles and below the knee. Occasionally a man may be seen with a necklace of trade beads. The women wear very numerous bracelets, those made of grass being the commonest; many are made of iron and some of brass wire—a trade article purchased in Toro. Grass bracelets are frequently blackened by means of smoke.

Heavy iron neck ornaments are worn by married women. These are in some cases thick closed iron rings; others are open rings prolonged into straight blunt horns bound together by wire at the ends (Pl. XLIX, Fig. 1). In many instances thinner iron is used and the open ends are prolonged into flat closely coiled spirals (Pl. XLIX, Fig. 2). Occasionally loops of iron wire are used. Children in arms generally have a large number of grass or iron necklaces to which are attached many charms and amulets, such as leopard's teeth, cowry shells, cartridge cases, and little pieces of wood.

Ear ornaments are not very common; a few of the Baamba of both sexes, however, have the lobes pierced and one or more iron rings passed through the hole. There are seldom more than a single hole in each lobe. Finger-rings of grass or metal are not uncommon, especially among the women. Any digit, including the thumb, may support one of these; but the index finger seems to be especially favoured. Very rarely indeed the septum of the nose is pierced and a quill or stick pushed through the opening.

Lip-rings are common, more so among the women than the men. Occasionally (chiefly among the men) a single ring-hole is pierced through the centre of the upper lip, but more commonly two others are present as well, one at each extremity of the upper lip. Among the women the central hole is usually omitted and there may be two or more ring-holes in each lip at the extremities—two each side of the upper lip and three each side of the lower lip is common (Pl. XLIX, Figs. 1 and 2).

Formerly it was the custom for every member of the tribe to file the incisors to points, but by no means do all the Baamba do this to-day. Eyebrows and eyelashes are in many instances removed, and cicatrization is indulged in by both sexes. The scars are all raised and are of the same colour as the surrounding skin. Cicatrization on the face takes the form of lines of raised dots, the commonest type being that of a band of two or three such lines placed horizontally across the forehead (Pl. XLIX. Fig. 2, and Pl. LI. Figs. 1 and 2). Occasionally the number of lines is increased in the vicinity of the temples. With regard to cicatrization patterns on the trunk and arms, the illustrations on Pls. XLIX–LI. will give a better idea than a verbal description. The patterns adopted are purely ornamental and are subject to individual choice. They have, so far as I could gather, no clan or family significance.

In general, the hair is worn short in both sexes, and the head is frequently shaved. Some women wear a short fringe, and a top-knot is occasionally seen among the men. Except when dancing, no ornaments are worn in the hair.

(c) *Eating and Drinking.*—Meal times are very irregular; the men eat when they feel inclined to do so. Several men partake of their meal together in a small dining hut, called *Kitubi*, which the women are not allowed to enter. In addition to the usual totem prohibitions, as far as food is concerned, there is a general taboo on carnivore flesh for women: nor may they eat chicken—a common form of prohibition in savage Africa.

Their neighbours, the Batoro, say that the Baamba are cannibals: an assertion which the Baamba deny. It would seem, however, that the Ababulebule (*see* next section) are corpse-eaters and therefore, perhaps, ceremonial cannibals. It is to be noted, too, that Roscoe found the Baamba eating human flesh when he visited them some twenty-five years ago. Moreover, the right arm of a murderer is eaten in certain circumstances (see under *Battle*, p. 522).

Uncooked meat is sometimes consumed, but it is usual to dry all meat on sticks in front of a fire before it is eaten.

(d) *Tribal Organization.*—The tribe is divided into two sections:—

(*a*) The Babuizi.
(*b*) The Ababulebule.

The habitat of the former is in eastern Buamba, in the vicinity of Ruwenzori: that of the latter close to the Semliki River, and chiefly in the Ituri Forest. The language, of which different dialects are spoken by the Babuizi and the Ababulebule, belongs to the Lihuku division of the Bantu tongues and is known as Kuamba. The people have not true chiefs, but they have always acknowledged the *Mukama* of Toro as their overlord.

Their own form of administration has always been patriarchal, and because of this the people have not taken readily to the present system, which has been gently

and not unwisely thrust upon them. There is now a Muganda agent in charge of that part of the Buamba country which falls within the Administrative boundaries of Toro.

The tribal unit is the village community, which is essentially a family group. The head of each village is a paterfamilias, who chose the site of the village in the first instance, and around whom are gathered his wives and children, and the wives and children of his sons and sons' sons: so that a village may contain as many as fifty huts. The paterfamilias, or elder (*sali*), has little power beyond that of arbitration, although in theory he is the Great-One in authority. The tribe is divided up into a number of totemic clans: these have been already listed by Roscoe (*loc. cit.*). Descent is in the male line, and clan exogamy is strictly observed. The Babuizi and Ababulebule intermarry.

(e) *The Village.*—A Buamba village (*kikari*), unlike those generally seen in untouched Bantu Africa, consists of a "street," that is to say two lines of huts facing each other (Pl. LII. Fig. 1). At each end of the street is a ghost hut. Villages are generally, but not always, situated on fairly high ground (low hills) near streams. Each wife has her own hut in which she sleeps with the very young children. Boys and girls of the same family having arrived at the age of puberty sleep separately under one and the same roof, the hut being regarded as their own. There is a special dining hut for the men. In hut construction the roof is made first. The floor of the hut is of beaten mud or cowdung or both. No grass is allowed on the floor.

When for any reason a son decides to break away from the patriarchal circle, he betakes himself with his wife and other belongings to an unoccupied hillock, there to start the germ of another village of which he will be paterfamilias.

(f) *Magico-Religious Affairs and Initiation Ceremonies.*—Religious cult consists very largely of propitiation of the spirits of the dead (*mulimo*). A creator known as *Nyamuhunga*, is recognized; he does not appear to receive any special worship, and is, as far as I could discover, otiose. A number of powerful spirits, or minor "gods" collectively known as *Balubule* are propitiated. These are sometimes identified with the Bachwazi, the white wizards who are supposed to have sprung from the crater-lakes of Toro, very long ago, and to have returned there.

Wizards or medicine-men, whose powers are said to be hereditary, are set apart for training from childhood; and from the first their diet is restricted. They may not partake of the flesh of the snake (*njuk*), rat (*mbalu*), lion (*ntale*), or leopard (*Ngūe*). The nature of the training and initiation ceremonies of wizards is extremely difficult, if not impossible, to discover. The functions of the wizard are the healing of the sick, augury and divination, and the making of rain if and when this becomes necessary, which, I am told, it seldom does. Sickness is considered to be due to interference from spirits of the dead. The troubled person consults the wizard

who determines who the spirit is, and whether the time is ripe for propitiation, and the nature of the sacrifice to be made. It may (rarely) happen that the root of the trouble is a message from the spirit-world to the effect that the patient is called upon to perform some specific act or service: but in any case propitiation is at the expense of the individual seeking help from the wizard. Offerings are made: the people of the village come together and dancing and drinking is indulged in, sometimes for several days: beer is distributed, goats are slaughtered and promiscuous intercourse permitted.

Circumcision is performed upon all the males. This rite is called *Eryamba*. Each father circumcises his own son, and the day and time of the operation are kept absolutely secret. It is believed that should man's estate be reached by an uncircumcised individual, evil spirits will make off with him, and he will die. Before the ceremony takes place the father makes gifts to the spirit of the tribe (presumably some great ancestor, but I am not sure of this). He also builds a small "temple hut" before which he places offerings on his son's behalf, praying the while that circumcision may free his son from evil.

After circumcision a boy is domiciled with his father for four days. He is then sent into the forest close at hand, there to build a small grass hut in which to dwell in seclusion for three months. During this time he is forbidden to go near any women, but should he do so, both he and the woman approached are punished. His actions are carefully watched, and his food is provided by his father and his male friends. Any infringement of rules is severely dealt with. When the period of seclusion has drawn to a close the boy fills his little house with dried grass and burns it down. He rushes off to the nearest stream (*kitamba*) to wash: and when night falls, he returns to the compound of the hut wherein he was circumcised. Here the Chief Woman of the village (the first wife of the paterfamilias) clothes him from head to foot in dried banana leaves, covering his head and face completely with them. He then enters the hut, and all the men of the village, including his own father, are called to attend. When they are gathered outside the hut she who clothed the lad stands at the door and cries out to the men—*Do you see your son? From this time onwards he is a man of your tribe, and if anyone does him an injury or puts a spell upon him, I, the Mother of his clan, will curse such a one, I will curse him unto death.* A great feast is then prepared, and there is much show of rejoicing, during which all cry *the sin of the child is destroyed for the "Gods" have been propitiated by blood* (*magira*). After the feast is over, the boy returns to his father's hut where he stays for a month. Then arrangements may be made for his marriage.

(g) *Marriage.*—It appears that the Baamba never sell their girls in marriage. Wives are usually obtained by exchanging the girls of three or four years of age of one family for those of another. No dowries are paid. If a man does not like a girl when she has become marriageable, he takes her back to her father with a small present (of five chickens it is said) and asks for another girl of the same standing.



FIG. 2.



FIG. 1.

FIGS. 1 AND 2.—BAAMBA MEN, WEARING BARK-CLOTH: FRONT AND PROFILE VIEWS.



FIG. 2.

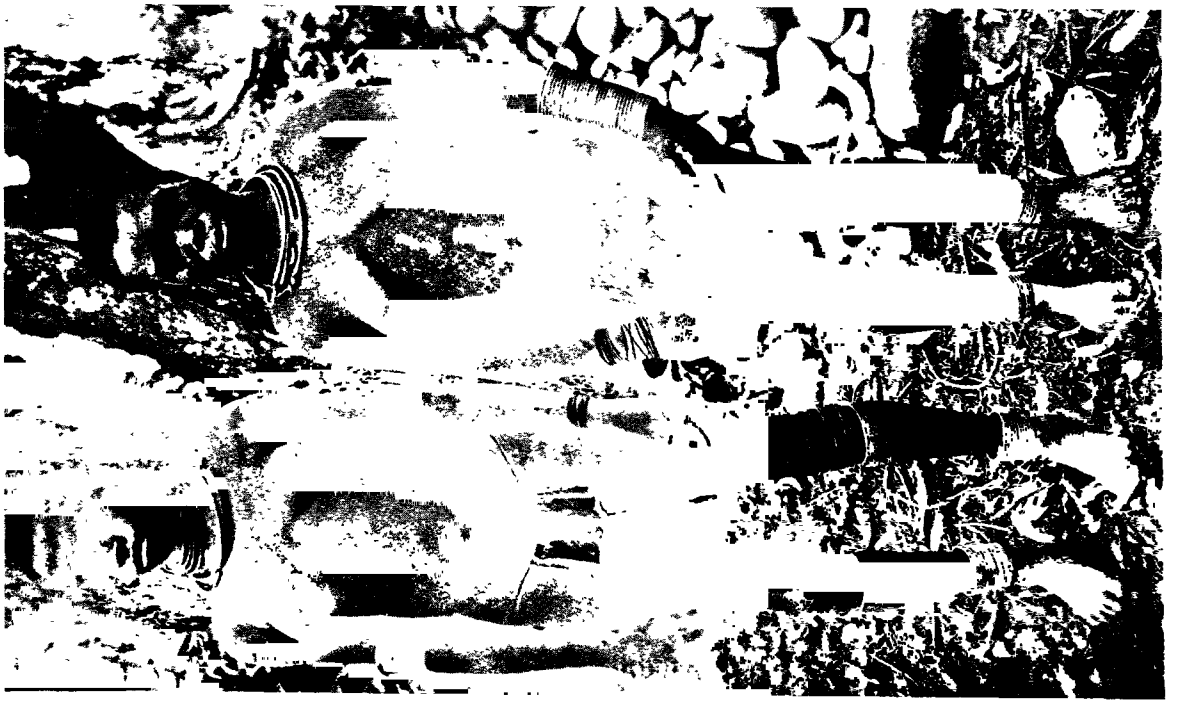


FIG. 1.

FIGS. 1 AND 2.—BAAMBA WOMEN, WEARING BARK-CLOTH.



FIG. 2



FIG. 1.

FIGS. 1 AND 2.—BAAMBA WOMEN, WEARING IRON NECK-RINGS AND LIP-RINGS.



FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.

FIGS. 1–4.—BAAMBA MEN, SHOWING CICATRIZATION OF FACE, TRUNK AND ARMS.

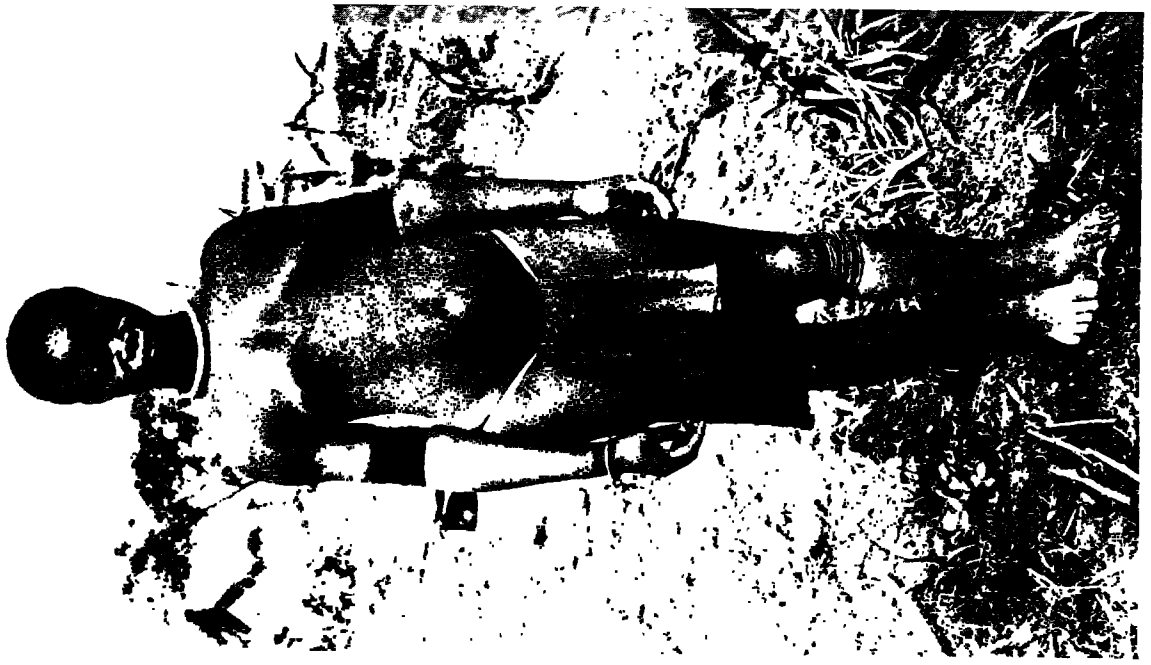


FIG. 2.



FIG. 1.

FIGS. 1 AND 2.—BAAMBA MAN AND WOMAN, SHOWING CICATRIZATION OF FACE AND TRUNK.



FIG. 1.—BAAMBA VILLAGE.

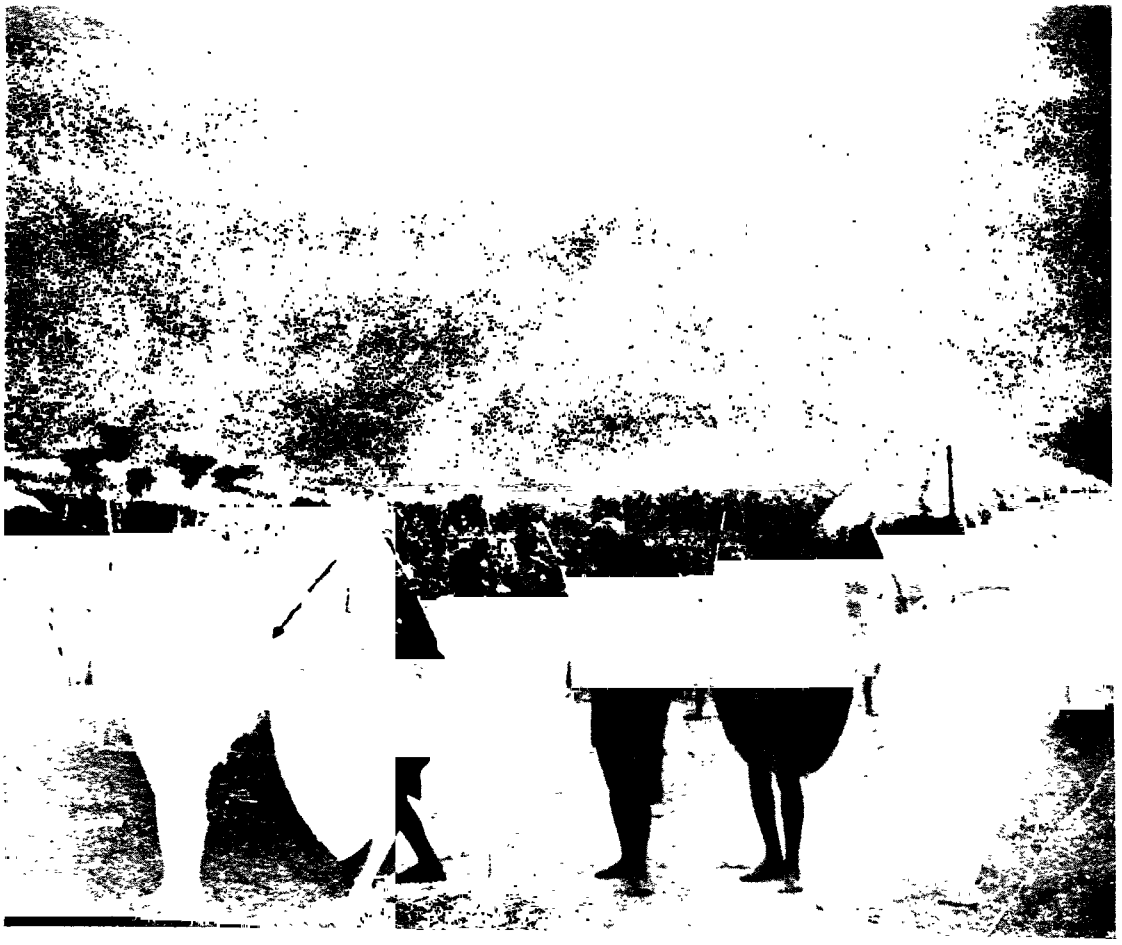


FIG. 2.—BAAMBA, CARRYING SPEARS AND SHIELDS OF BASKETWORK EDGED WITH FUR.

Should he find a desirable girl he gives the father a goat, and, *provided that she is willing*, the girl becomes the wife (*nkari*) of him who gave her father a present. A marriage contract of this sort is usually an occasion for much beer drinking, dancing, and fighting, which starts as a sham and frequently ends more or less seriously.

A Baamba girl need not wait to be chosen, she may choose for herself, in this manner: Having seen a man whom she desires, she goes to his hut and, if he will have her, makes her home there. After some days, her father or brother, or both, come in search of her. Much loud talking and shouting ensue: quivers are filled,[1] spears sharpened, drums are beaten and terrifying noises are produced by means of ivory and other horns. Some sham and, possibly, a little real fighting may follow. But little comes of it all, for when the opposing parties meet, the father of the man who concealed the woman appeases her "enraged" parent, to whom he gives, if he has one, a daughter of his own (who may be exceedingly young) to become the bride of the brother of the "stolen" girl. The matter is thus "squared up"; but any misfortune arising from this arrangement must be equally shared, and so, should one of the wives die, the other must go back to the house of her parents. She then becomes eligible for re-marriage, or may be given away in circumstances similar to those already related. To become a spouse is considered the duty of every young woman of Buamba.

When a husband dies, his widow gives vent to much wailing and displays signs of sorrow for two or three months, during the whole of which time she is smothered from head to foot in castor-oil and ashes. At the end of the period of mourning, if not too old, she is escorted by her friends to another village where, it is hoped, another husband may be found for her. She is dressed in all her finery and well smeared in oil and coloured clay. The men turn out to admire her, and those who desire the woman pelt her with puff balls. The prize goes to him who first hits her on the breast with one of these. She is then taken away to become a temporary wife. This is a sign for illicit intercourse; men seize young girls and drag them off to their huts where they stay for three or four days, after which they return; the widow remains till the man who has taken her decides whether he will make her his wife or not. The woman, however, has some say in the matter.

Free sexual intercourse is a very common occurrence among the Baamba, and is not an offence so long as it is the outcome (part of) a ceremony such as that described above, and always provided that the female is willing. It is said that fathers urge their girls to seek intercourse with men when a proper opportunity presents itself. If as a result of such intercourse a child is born, the man must make a present to the girl's father, thus buying the child, and the girl must return to her father as soon as the child can be left.

[1] It does not appear that the bow and arrow are ever used in warfare by these people.

(h) *Cultivation.*—Men and women work together in the fields: the former clearing the forest while the latter sow the seed and cultivate the crops. These, at the present day, are Indian corn, sweet potatoes, rice, semsem, pumpkins, and yams. Bananas are also grown.

(i) *Hunting.*—The Baamba are great hunters and pursue almost anything from the elephant (*mbunga*) to the rat. They hunt by means of spears (*kunga*), bows (*teba*) and arrows (*kōde*), and nets and traps. Meat, particularly elephant meat, which is considered a luxury, is sometimes eaten in a semi-putrid state. While, as already mentioned, women may not ordinarily partake of the flesh of the lion, an exception is made when one of these beasts is known to have killed and fed upon one of the village cows: then the females of the village are permitted to make a meal of the offal and contents of the lion's stomach, provided all are satisfied that the brute is really responsible for the kill. Rats and snakes are greatly sought after and shot with small arrows from a distance of anything up to 15 yards. As soon as a Baamba has discharged his arrow he ducks, at the same time throwing his body over to the right.

(j) *Battle.*—The Baamba strike one as a cheerful folk with a mild air. They are, however, easily roused to anger, when their love of a fight appears to equal that of the proverbial Irishman. Indeed, no young man is looked upon with favour till he has blooded his spear; and until he has done so he may take no part in the councils of the tribe. It is for this reason, possibly, that quarrels are picked on the slightest provocation. One quarrel tends to lead to another. Should a man meet his death in a private feud there are two alternative ways of dealing with the matter: By one the culprit is delivered up to justice; he is put to death and his right arm, well roasted, is eaten by the relatives of the murdered man. The rest of the body is given over to the Bahuhu,[1] the Babira[1] or the dwarfs of the Congo Forest, who are notified beforehand. In cases where the culprit escapes and is not delivered up to justice, the war-horns are blown, that is to say excruciating noises are made by means of carved elephant tusks. On hearing this alarm, every man runs to his hut, seizes his spears and shield and hastens to the scene of the slaughter. Sides are quickly taken and battle at close quarters begins. Spears (*kunga*), which are socketed, are not thrown but used as stabbing instruments, and when these are broken, knives (*mbako*) are used (throwing-knives appear to be unknown). The art of this type of warfare appears to be to capture as many spears as possible and then to bolt off home, leaving the fight to continue as it may. The quarrel is not considered to be over, however, till the casualties on each side are accounted equal.

The Baamba shields (*nguba*)—(Pl. LII, Fig. 2)—are large and somewhat heart-shaped. They are made of basket-work and edged as a rule with fur. They may be described as "floppy." Tiny bows and arrows are used, but only in hunting.

[1] People closely allied to the Baamba and living in the Ituri Forest near the Semliki.

MISCELLANEA.

PROCEEDINGS OF THE ROYAL ANTHROPOLOGICAL INSTITUTE, 1929.

January 29th. 1929.

Annual Meeting. (*See* p. 1.)

January 15th. 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

The minutes of the last meeting were read and confirmed.

Professor R. RUGGLES GATES read his paper on "Studies of Eskimos and Indians in the Canadian Arctic," illustrated by lantern slides and exhibits.

The paper was discussed by Mr. GOWAN, Professor FLEURE, Dr. HARRISON, Mr. PARKYN, Mr. BRAUNHOLTZ, Mr. FALLAIZE, Mr. HORNELL, and the PRESIDENT, and Professor RUGGLES GATES replied.

A hearty vote of thanks was accorded to Professor RUGGLES GATES for his paper, and the Institute adjourned till January 29th.[1]

February 12th. 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

The minutes of the last meeting were read and confirmed.

Mr. TORDAY read his paper on "The Principles of Bantu Marriage."

The paper was discussed by Mr. BALFOUR, Prof. MALINOWSKI, Mr. DRIBERG, Mr. SCHAPERA, Capt. PITT-RIVERS, and Dr. STANNUS, and Mr. TORDAY replied.

A hearty vote of thanks was accorded to Mr. TORDAY for his paper, and the Institute adjourned till February 26th.

February 26th. 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced: Dr. J. Klercker, Mrs. R. W. Gaunt, Mr. William Vernon Brelsford.

[1] Annual General Meeting.

The PRESIDENT alluded to the death of Sir C. HERCULES READ, Past President and Trustee of the Institute, and paid an eloquent tribute to his life and work, and asked the Fellows present to join with the Council in the expression of regret and sympathy to be sent to Lady Read.

Mr. J. B. CHARLESWORTH read his paper on "The Topoke of the Congo," illustrated by lantern slides.

The paper was discussed by Mr. TORDAY and Mr. DRIBERG, and Mr. CHARLESWORTH replied.

A hearty vote of thanks was accorded to Mr. CHARLESWORTH for his paper, and the Institute adjourned till March 12th.

March 12th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The ABBÉ BREUIL read his paper on "Essai de Coordination des faits géologiques, relatif aux industries paléologiques anciens au sud et sud-est d'Angleterre."

The paper was discussed by Mr. PEAKE, Mr. WARREN, and the PRESIDENT, and the ABBÉ BREUIL replied.

A hearty vote of thanks was accorded to the ABBÉ BREUIL for his paper, and the Institute adjourned till March 26th.

March 26th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced: Mrs. H. Gnana Durai, Miss Laura Garrard, Mr. C. F. Hawkes.

In the absence of the author, Mr. A. LUCAS, in Egypt, Professor MYRES read his paper on "The Nature and Colour of Pottery, with special reference to that of Ancient Egypt."

The paper was discussed by Professor GORDON CHILDE, Miss MURRAY, Mr. HORNBLOWER, and the PRESIDENT.

A hearty vote of thanks was accorded to the author for his paper, and the Institute adjourned till April 16th.

April 16th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The President then left the Chair, which was taken by Mr. H. J. E. PEAKE, Past President.

The PRESIDENT read his paper on "The Origin of the Fibula and the distribution of its earlier varieties in Greece and the Nearer East," illustrated by lantern slides.

The paper was discussed by Mr. DE NAVARRO, Professor DE MONTMORENCY, and Mr. PEAKE, and Professor MYRES replied.

A hearty vote of thanks was accorded to the PRESIDENT for his paper, and the Institute adjourned till April 30th.

April 30th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Dr. C. O. BLAGDEN in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced: Mr. J. B. Charlesworth, Mr. C. A. L. Hahn, Mr. E. E. Jenkins, Dr. Dan McKenzie and Professor E. H. Minns.

Mr. DRIBERG read his paper on "The Galla Colonists of the Sixteenth Century."

The paper was discussed by Mr. E. TORDAY, Miss WERNER, Mr. LOUIS CLARKE, Mr. BRAUNHOLTZ, and Mr. PARKYN, and Mr. DRIBERG replied.

A hearty vote of thanks was accorded to Mr. DRIBERG, and the Institute adjourned till May 14th.

May 14th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

The minutes of the last meeting were read and confirmed.

Dr. R. F. ASHLEY MONTAGU read his paper on "The Tarsian Hypothesis in the Descent of Man."

The paper was discussed by Dr. SHRUBSALL, Professor LE GROS CLARK, Dr. HOSE, Miss TILDESLEY, Dr. HARRY CAMPBELL, and the PRESIDENT, and Dr. ASHLEY MONTAGU replied.

A hearty vote of thanks was accorded to Dr. ASHLEY MONTAGU for his paper, and the Institute adjourned till May 28th.

May 28th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced: Baron von Eickstedt, Dr. Chas. Hose, Miss Maisie Gaffikin, Mr. H. Hogbin, Miss M. K. Kennedy, Mr. H. C. Lake, Mr. J. A. Spranger.

Mrs. M. HASLUCK read her paper on "Turkish Games," illustrated by photographs and lantern slides.

The paper was discussed by Lady GOMME, Sir THOS. ARNOLD, Miss DURHAM, Mr. HORNELL, and the PRESIDENT.

A hearty vote of thanks was accorded to Mrs. HASLUCK for her paper, and the Institute adjourned till June 4th.

June 4th, 1929.

Special Meeting at 52 Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

Mr. T. A. RICKARD opened the discussion on "The Discovery of Metals."

The discussion was continued by Messrs. PEAKE, MCCARTHY, GARFITT, HOBLEY, JAMES, G. A. WAINWRIGHT, RICHARDS, BRAUNHOLTZ, HILDBURGH, REYNOLDS, and the PRESIDENT, and Mr. RICKARD replied.

A hearty vote of thanks was accorded to Mr. RICKARD, and the Institute adjourned till June 11th.

June 11th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Mr. G. D. HORNBLOWER in the Chair.

The minutes of the last two meetings were read and confirmed.

Miss J. GAULTIER DE LA VERENDRY gave a recital of the Folk Songs of Canada—Eskimo, Indian, and French Canadian, in the costume appropriate to each race.

In the interval between two groups of songs Mr. H. J. Braunholtz demonstrated a series of slides representing N. American artifacts and pictographs.

A hearty vote of thanks was accorded to Miss GAULTIER DE LA VERENDRY for her pleasing rendering of the Folk Songs, and the Institute adjourned till June 25th.

June 25th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Mr. HORNBLOWER in the Chair.

The minutes of the last meeting were read and confirmed.

Miss B. BLACKWOOD read her paper, "The Indians of British Columbia," illustrated by lantern slides.

The paper was discussed by Mrs. AITKEN, Mr. PARKYN, Sir FLINDERS PETRIE, Mr. HORNBLOWER, and Mr. FALLAIZE. Sir W. FLINDERS PETRIE showed lantern slides of flint implements from Palestine.

A hearty vote of thanks was accorded to Miss BLACKWOOD and Sir FLINDERS PETRIE, and the Institute adjourned till the autumn.

October 29th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

The minutes of the last meeting were read and confirmed.

Mr. TORDAY read his paper on "Fetishism, Idolatry and Witchcraft among the Western Bantu."

The paper was discussed by Professor ELLIOT SMITH, Mr. HENRY BALFOUR, Professor MALINOWSKI, Dr. GEORGE DORSEY, Capt. ROWE, and Mr. TORDAY replied.

A hearty vote of thanks was accorded to Mr. TORDAY for his paper, and the Institute adjourned till November 5th.

November 5th, 1929.

Special Meeting at 52, Upper Bedford Place.

Professor G. ELLIOT SMITH, Vice-President, in the Chair.

Mrs. ZELIA NUTTALL read her paper on "The Cult of the Sun at its Zenith in South America," illustrated by lantern slides.

The paper was discussed by Capt. JOYCE, Mrs. AITKEN and Mr. BEASLEY, and Mrs. NUTTALL replied.

A hearty vote of thanks was accorded to Mrs. NUTTALL for her paper, and the Institute adjourned till November 12th.

November 12th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

The minutes of the last meeting were read and confirmed.

Dr. EVANS-PRITCHARD read his paper on "Zande Witch Doctors," illustrated by lantern slides.

The paper was discussed by Professor MALINOWSKI and Dr. STANNUS, and Dr. EVANS-PRITCHARD replied.

A hearty vote of thanks was accorded to Dr. EVANS-PRITCHARD for his paper, and the Institute adjourned till November 19th.

November 19th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor J. L. MYRES, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced: Dr. J. F. Bulsara, Dr. Gerhardt von Bonin, Dr. H. A. Cates, Major C. D. Daly, Mr. L. B. Escritt, Mrs. Osgood Field, Mr. W. T. G. Henderson.

Miss Barbara Lowe, Mr. F. B. Macrae, Mr. F. J. Meredith, Dr. R. Money-Kyrle, Mr. D. A. F. Shute, Dr. T. L. Woo, Dr. F. R. Wulsin, Major N. Y. Younis.

Professor W. J. SOLLAS read his paper on "The Sagittal Section of the Human Skull," illustrated by lantern slides.

The paper was discussed by Professor ELLIOT SMITH, Dr. SHRUBSALL, Miss TILDESLEY, Professor MYRES, and Professor SOLLAS replied.

A hearty vote of thanks was accorded to Professor SOLLAS for his paper, and the Institute adjourned till November 26th for the Huxley Lecture.

November 26th, 1929.

Huxley Lecture.

December 3rd, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Dr. H. S. HARRISON, Vice-President, in the Chair.

The minutes of the last meeting were read and confirmed.

Mr. A. L. ARMSTRONG read his paper on "The Report of the Excavations in the Cave of Bambata and at the Victoria Falls, Southern Rhodesia, 1929," illustrated by lantern slides.

The paper was discussed by Mr. BALFOUR, Mr. BURKITT, Miss GARROD, and Mr. BRAUNHOLTZ, and Mr. ARMSTRONG replied.

A hearty vote of thanks was accorded to Mr. ARMSTRONG for his paper, and the Institute adjourned till December 10th.

December 10th, 1929.

Special Meeting at 52, Upper Bedford Place.

Professor ELLIOT SMITH, Vice-President, in the Chair.

Capt. T. A. JOYCE read the "Report of the British Museum Expedition to British Honduras in 1929," dealing with the Cave which he and Mr. ASHTON excavated. Capt. GRUNING described the transport and other difficulties the expedition had to overcome.

The paper was discussed by Professor ELLIOT SMITH, Lady SCOTT, and Mr. GUY INNES, and Capt. JOYCE replied.

A hearty vote of thanks was accorded to Capt. JOYCE and Capt GRUNING, and the Institute adjourned till December 17th.

December 17th, 1929.

Ordinary Meeting at 52, Upper Bedford Place.

Professor ELLIOT SMITH, Vice-President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced: Dr. Donald Drysdale Anderson, Mr. L. J. P. Gaskin, Mr. Percy Marks, Mr. George Sutton Thomas, Mr. D. A. C. Tyrie.

Mr. J. P. MILLS read his paper on "A Tour in the Chittagong Hill Tracts," illustrated by lantern slides, and the lecturer also showed slides illustrating hitherto undescribed monoliths which he had discovered.

The paper and slides were discussed by Mr. BALFOUR, Dr. BLAGDEN, Miss TILDESLEY, Mr. BRAUNHOLTZ, Professor ELLIOT SMITH, and Mr. MILLS replied.

A hearty vote of thanks was accorded to Mr. MILLS for his paper and excellent slides, and the Institute adjourned till January 21st, 1930.

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NOTE.—*The Numbers in ordinary type refer to the pages: the numbers in Clarendon type are the reference numbers of* MAN, 1929. *Entries which refer to reviews are shown in italics. For a full list of reviews refer to the* CONTENTS *of* MAN. *For collected references, see especially Anthropology, Archæology, Religion and Magic, Sociology, and Technology.*

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1920 Maynard, Guy, Esq., *The Natural History Museum, High Street, Ipswich.*

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1900 Seligman, Charles G., Esq., M.D., F.R.S., PAST PRESIDENT (1923–1926). Professor of Ethnology, University of London, *Court Leys, Toot Baldon, Oxford.* (¶§)

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Year of Election.

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1927 Watson, C. B. G., Esq., 18 *St. Michael Road, Bedford.*

1925 Wauchope, Major R. S., *Survey of India, Bangalore, S. India.*

1926 Wayland, E. J., Esq., *P.O. Box* 9, *Entebbe, Uganda.*

1927 Webster, G. W., Esq., *The Residency, Sokoto, Nigeria, N.P.*

1929 Webster, G. W. Harding, Esq., *Kelly College, Tavistock, Devon.*

1923 Webster, Prof. Hutton, *College of Arts and Sciences, The University of Nebraska, Lincoln, Nebraska, U.S.A.* (*).

1924 Wedgwood, Miss Camilla H., c/o *Professor Radcliffe-Brown, Department of Anthropology, Sydney University, Sydney, N.S.W.* (¶)

1907 Welch, H. J., Esq., 9 *Homefield Road, Bromley, Kent.*

1907 Wellcome, Henry S., Esq., 6 *Gloucester Gate, Regent's Park, N.W.* 1.

1924 Werner, Miss Alice, Professor of Swahili, *School of Oriental Studies, Finsbury Circus, E.C.* 4; 4 *Guesens Court, Welwyn Garden City, Herts.*

1905 Westermarck, E., Esq., Ph.D., *Kaskisgatan* 4A, *Abo, Finland.*

1921 Williams, F. E., Government Anthropologist, *Port Moresby, Papua.* (*¶)

1927 Williams, Rev. H. L. O., *The Institute, Uzuakoli, N.E.R., via Port Harcourt, Nigeria.*

1927 Williams, Rev. J., *Enpakari, Kentwood Hill, Tilehurst, near Reading.*

1921 Williams, O. Guise, Esq., *Maswa Mwanza District, Tanganyika Territory, E. Africa.*

Year of Election.

1910 Williams, S. H., Esq., L.D.S., R.C.S. (Eng.), F.S.A., 32 *Warrior Square, St. Leonards-on-Sea.*

1909 Williamson, R. W., Esq., M.Sc., *The Copse, Brook, near Godalming, Surrey.* (¶§)

1920 Willoughby, Rev. W. C., *The Kennedy School of Missions, 55 Elizabeth Street, Hartford, Conn.*

1922 Wilman, Miss M., *McGregor Museum, Kimberley, South Africa.*

1928 Wilson, Capt. G. E. H., c/o *Survey Department, Dar-es-Salaam, Tanganyika Territory.*

1921 Wilson, J. T., Esq., F.R.S., Professor of Anatomy, *St. John's College, Cambridge.*

1924 Witty, Rev. Douglas, *The Vicarage, North Hykeham, Lincoln.*

1928 Wolfenden, Stuart N., Esq., c/o *Messrs. Ward, Perks & Terry, 85 Gracechurch Street, E.C. 3.*

1920 Wollaston, A. F. R., Esq., M.R.C.S., L.R.C.P., *Bencombe House, Uley, Dursley, Gloucestershire; The Savile Club, 107 Piccadilly, W. 1* (*)

1929 Woo, T. L., Esq., M.A. (Columbia), Ph.D. (London). 28 *Bruton Street, W.C. 1.*

1924 Woodward, S. W., Esq., *Castle Street, Hinckley.*

1909 Wright, A. R., Esq., 8 *Colyton Road, Honor Oak, S.E. 22.*

1918 Wright, H. Newcome, Esq., LL.D., *St. Austell, Cornwall.*

1927 Wright, Maurice B., Esq., O.B.E., M.D., 86 *Brook Street, W. 1.*

1903 Wright, W., Esq., M.B., D.Sc., F.R.C.S., F.S.A., Dean and Professor of Anatomy, *London Hospital, E.; Villa Candens, Vicarage Way, Gerrard's Cross, Bucks.* (*¶)

1929 Wulsin, F. R., Esq., *University Museum, 33rd and Spruce Streets, Philadelphia, U.S.A.*

1927 Yates, T. J. A., Esq., 36 *Gordon Square, W.C. 1.*

1929 Yearsley, P. Macleod, Esq., F.R.C.S., 81 *Wimpole Street, W. 1*

1927 Young, Matthew, Esq., M.D., *Institute of Anatomy, University College, Gower Street, W.C. 1.*

1928 Young, Rev. T. Cullen, *Loudon P.O., Mzimba, Nyasaland.*

1906 Yule, G. Udny, Esq., F.R.S., F.S.S., *St. John's College, Cambridge.* (¶)

AFFILIATED SOCIETIES [under By-Law IX].

1915 Brighton Public Library, Museums and Fine Art Galleries, *Brighton.*

1921 Spelæological Society, *University of Bristol.*

1912 The London School of Economics, *Clare Market, Houghton Street, W.C. 2.*

1900 The Oxford University Anthropological Society, c/o *R. R. Marett, Esq., M.A., Exeter College, Oxford.*

1914 Musées Royaux du Cinquantenaire, *Brussels.*

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J or **M** after current periodicals indicates an exchange for the *Journal* or *Man* respectively.

The letter **I** in front of a number indicates that the series is incomplete.

I 1. Abhandlungen der Naturhistorischen Gesellschaft zu Nürnberg, 1898 (in progress). **M.**

I 1E. Aborigines Friend, The, London, 1847–58.

1G. Academie des Sciences D'Ukraine [Publications]. Kiev, 1926 (in progress), **J.** & **M.**

2. Acta Academiæ Aboensis, Humaniora. Abo, Finland, 1920 (in progress).

I 2E. Acta Scholae Medicinalis, Kioto, 1916 (in progress).

I 3. Acta et Commentationes Universitatis Dorpatensis, 1921–29.

4. Actas y Memorias, Sociedad Española de Antropologia. Madrid, 1921 (in progress). **J.**

4F. Africa, London, 1928 (in progress).

I 4S. Aichi Journal of Experimental Medicine, Nagoya, 1923-25, continued as Nagoya Journal of Medical Science.

5. American Anthropologist, Washington, 1889 (in progress), **J.**

I 6 American Antiquarian, Salem, 1881–1913.

7. American Archæology, University of California, Berkeley, 1903 (in progress), **J.**

7E American Breeders Magazine, The, Washington, 1910–13, continued as The Journal of Heredity.

I 8. American Indian Magazine, Washington, 1913–19.

9. American Journal of Physical Anthropology, Washington, 1918 (in progress), **J.**

I 10. American Journal of Psychology, Worcester, 1898 (in progress), **J.**

I 11. Amtliche Berichte des westpreussischen Provinzial-Museums, Danzig, 1901–16.

I 12. Anales del Museo Nacional de Arqueologia, Mexico, 1903–13 ; 1925 (in progress).

13. Anals de l'Institut d'Orientacio Professional, Barcelona, 1920.

14. Ancient Egypt, London, 1914 (in progress).

I 14S. Annalen des k.k. Naturhistorischen Hofmuseums, Vienna, 1886–93.

15. Annales de la Société royale d'Archéologie de Bruxelles, 1887 (in progress).

15F Annales de la Société Linnéenne de Lyon, 1924 (in progress).

16. Annales du Musée Guimet. Paris, 1922 (in progress). **J.**
17. Annales du Musée du Congo Belge, Renaix, 1924 (in progress).

I 17E. Anales del Museo Publico. Buenos Aires, 1864–70.

17G. Anales del Museo de la Plata. Buenos Aires, 1907 (in progress).
18. Annals of Archæology and Anthropology, Liverpool, 1908 (in progress), **J.**
18K. Annals of Eugenics, London, 1925 (in progress), by subscription.
19. Annals of the Bhandarkar Institute, 1918 (in progress), **M.**
20. Annals of the Natal Museum, London, 1906 (in progress), **M.**
20K. Année sociologique, L', Paris, 1896 (in progress), **J.** & **M.**

I 21. Annuaire de la Société d'Archéologie de Bruxelles, 1890–1914.

21K. Annuaire de l'Académie royale de Belgique, Brussels, 1892–1929.
21S. Annuaire et Mémoires du Comité d'Études Historiques . . . de l'Afrique Occidentale française, Gorée, 1916–17.
22. Annual of the British School at Athens. 1894 (in progress), **J.**

I 23. Annual Report of the Boston Public Library, 1896–1917.

23C. Annual Report of the Archæological Department, Hyderabad, Calcutta, 1916 (in progress).
23D. Annual Report of the Director-General of Archæology [India], Calcutta, 1911-21.
23E. Annual Report of the Archæological Survey of India, Central Circle, Patna, 1907-21, continued as the Annual Report of the Archæological Survey of India.
23H. Annual Report of the Archæological Survey of India, Southern Circle, Madras, 1907-21, continued as the Annual Report of the Archæological Survey of India.
23N. Annual Report of the Archæological Survey of India, Western Circle, Bombay, 1907-21, continued as the Annual Report of the Archæological Survey of India.
23P. Annual Report of the Archæological Survey of India, Northern Circle, Lahore, 1907–21, continued as the Annual Report of the Archæological Survey of India.
23S. Annual Report of the Archæological Survey of India, Calcutta, 1903 (in progress).
24. Annual Report of the United States National Museum, Washington, 1884 (in progress).

I 24D. Annual Report of the Board of Regents of the Smithsonian Institution, Washington, 1855 (in progress).

24F. Annual Report of the Canadian Institute, Toronto, 1886–94, 1912.

I 24H. Annual Report of the Cincinnati Museum Association, 1899–1919.

I 24K. Annual Report of the Field Museum, Chicago, 1894 (in progress).

I 24N. Annual Report of the Horniman Museum, London, 1901–13.

I 24R. Annual Report of the John Crerar Library, Chicago, 1895 (in progress).

I 24T. Annual Report of the Museum of Local Archæology, Cambridge, 1891–1908.

I 25. Annual Report, Bureau of American Ethnology, Washington, 1879 (in progress).

I 25C. Annual Report of the Public Museum, Milwaukee, 1893–1907.

I 25H. Annual Report, Southern Indian Epigraphy, Madras, 1921 (in progress).

25N. Annual Report of the U.S.A. Geological Survey, Washington, 1876–1901.

I 25R. Annual Report of the Yorkshire Philosophical Society, York, 1891–1909.

I 26. Annual Report, Papua, Melbourne, 1907 (in progress).

I 26D. Annual Report of the Museum and Muniment Committee, Colchester, 1910-26.
26H. Annual Report, Northern Nigeria, Lagos, 1926 (in progress).
I 26K. Annual Report, Curator of Antiquities, Cyprus, Nicosin, 1914 (in progress).
I 26S. Annual Report, Conservator of the Royal College of Surgeons, London 1923 (in progress).
27. Annual of the American Schools of Oriental Research, Newhaven, 1919 (in progress). **M.**
I 28. Antananarivo Annual (Madagascar Magazine), Antananarivo, 1875–1900.
28K. Antiquity, London, 1927 (in progress).
29. Anthropologia Hungarica, Buda-Pest, 1923 (in progress), **M.**
30. Anthropological Papers of the American Museum of Natural History, New York, 1908 (in progress), **M.**
31. Anthropological Publications of the University of Pennsylvania, Philadelphia, 1909 (in progress), **J.**
31D. Anthropological Review, London, 1863-70.
32. Anthropologie, L', Paris, 1890 (in progress), **J.**
33. Anthropologie, Prague (Czech), 1923 (in progress), **M.**
34. Anthropologischer Anzeiger, Stuttgart, 1924 (in progress), **M.**
I 35. Anthropology Report, Papua, Port Moresby, 1917 (in progress).
36. Anthropos, Mödling, Austria, 1906 (in progress), **M.**
37. Antikvarisk Tidskrift för Sverige, Stockholm, 1864–1924.
38. Antiquaries Journal, The, London, 1921 (in progress), **M.**
I 39. Anzeiger fur schweizerische Altertumskunde, Zürich, 1900 (in progress). **J.**
39K. Arbeiten aus dem Anatomischen Institut der k.j. Univ., Sendai, 1919 (in progress).
I 39M. Anzeiger der ethnographischen Abteilung des Ungarischen National-Museums, Buda-Pest, 1903–10.
39S. Arc de Méridien Équatorial en Amérique du Sud, Paris, 1911–22.
I 39V. Archæologia Americana, Worcester, 1820, 1836–60.
I 40. Archæologia, London, 1857 (in progress). **J.**
40D. Archæologiai Ertesito, Buda-Pest, 1923 (in progress), **J.**
40P. Archæologica Hungarica, Buda-Pest, 1926 (in progress), **J.**
Archæological Survey of India. *See under* Memoirs and Annual Reports
I 41. Archæological Journal, London, 1845 (in progress), **J.**
42. Ἀρχαιολογικὴ Ἐφημερίς, Athens, 1883 (in progress), **J.**
43. Archæological Reports, Toronto, 1894 (in progress).
43M. Archæological Survey of Burma, Rangoon, 1908–22.
I 43S. Archæological Survey of Ceylon, Colombo, 1890–1922.
I 44. Archäologische Monographien, K. Vitterhets, Historie och Antikvitets Akademie, Stockholm, 1914 (in progress). **M.**
I 45. Archeologo Português, O, Lisbon, 1895 (in progress). **M.**
I 46. Arxius de l'Institut de Ciencies, Barcelona, 1915–24.
47. Archiv fur Anthropologie, Brunswick, 1866 (in progress), **J.**
I 48. Archiv fur Religionswissenschaft, Leipzig, 1910 (in progress), **J.**

I 49. Archiv für Rassenbiologie, Leipzig, 1904–14.
49E. Archiv Orientalni, Prague, 1929 (in progress), **M.**
50. Archives suisses d'Anthropologie générale, Geneva, 1914 (in progress), **M.**
Archives suisses des traditions populaires. *See* under Schweizerisches Archiv für Volkskunde.
I 51. Archivio di Antropologia Criminale, Turin, 1889 (in progress), **J.**
52. Archivio per l'Antropologia e la Etnologia, Florence, 1871 (in progress), **J.**
I 52E. Archivio della R. Soc. romana di Storia Patria, Rome, 1890–96.
I 53. Archivo de Medicina Legal, Lisbon, 1922–23.
I 54. Archivos do Museu Nacional de Rio de Janeiro, 1877 (in progress), **J.**
55. Archiwum Nauk Antropologicznych, Lwów, 1914 (in progress), **J.**
56. Arquivo de Anatomia e Antropologia, Lisbon, 1912 (in progress), **M.**
56K. Arquivos da Escola Medico-Cirurgicade de Nova Goa, Bastora, 1927 (in progress).
I 57. Ars Quatuor Coronatorum, Margate, 1899–1924.
57S. Asiatica, London, 1928 (in progress)
58. Atlantis, London, 1858–63.
59. Atti della Reale Accademia dei Lincei, Rendiconto, Rome, 1900 (in progress), **M.**
I 59A. Atti della Reale Accademia dei Lincei, Notizie degli Scavi di Antichità, Rome, 1880 (in progress), **J.**
59K. Atti Soc. Piemontese di Belle Arte, Turin, 1918 (in progress).
I 59S. Alte Orient, Der, Leipzig, 1903–23.
60. Altschlesien, Breslau, 1922 (in progress), **M.**
60S. Australian Association for the Advancement of Science, 1887 (in progress), **J.**
60T. Bayerische Vorgeschichtsfreund, Der, Munich, 1921 (in progress).
I 61. Baessler-Archiv, Berlin, 1910–13.
62. Bantu Studies, Johannesburg, 1923 (in progress), **M.**
63. Bergens Museum Aarbok, Bergen, 1916 (in progress), **J.**
63H. Berichte über die Mitteilungen von Freunden der Naturwissenschaften in Wien, 1847–51.
I 64. Biblia, Meriden, U.S.A., 1901–05.
65. Bibliotheca Africana, Innsbruck, 1924 (in progress), **M.**
65G. Bidrag till Södermanlands Äldre Kulturhistoria, Stockholm, 1877–1915.
I 65N. Bidrag till Finllands Natur och Folk, Helsingfors, 1884–1905.
I 65P. Bidrag till Vär Odlings Häfder, Stockholm, 1885–1906.
I 66. Bijdragen tot de Taal, Land en Volkenkunde, van Nederlandsch-Indië, Batavia, 1893 (in progress), **J.**
67. Biometrika, London, 1901 (in progress), by subscription.
68. Blätter für deutsche Vorgeschichte, Leipzig, 1925 (in progress), **M.**
69. Boletim do Museu Nacional de Rio de Janeiro, 1924 (in progress).
I 70. Boletin del Museo Nacional de México, 1903–04.
I 71. Boletim da Sociedade de Geographia, Lisbon, 1880–96.
I 72. Boletin de la Academia Nacional de Historia, Quito, 1920–27.

I 73. Boletin de la Academia Nacional de Ciencias en Cordoba, Buenos Aires, 1889–1906.
I 74. Boletin de la Sociedad Mexicana de Geografia y Estadistica, Mexico, 1913 (in progress).
75. Boletin de la Sociedad de Estudios Vascos, San Sebastian, 1921 (in progress), **M.**
75F. Boletin de la Sociedad ecuatoriana, Quito, 1918–20, continued as Boletin de la Academia Nacional de Historia.
I 75H. Boletins de la Real Academia de Ciencias y Artes, Barcelona, 1917–25.
76. Bollettino di Paletnologia italiana, Parma, 1875 (in progress), **J.**
77. Bollettino della R. Soc. Geografica italiana, Rome, 1916 (in progress), **M.**
I 78. Bollettino della Soc. piemontese di Belle Arti, Turin, 1918 (in progress), **M.**
79. British Journal of Psychology, London, 1904 (in progress), **J.**
80. British Medical Journal, London, 1923–28.
80F. British School of Archæology in Jerusalem, Supplementary Papers, Bulletins and Annual Reports, London, 1923 (in progress), **J.** & **M.**
I 81. Buletinul Soc. R. române de Geografie, Bucarest, 1915–21.
82. Bulletin of the School of Oriental Studies, London, 1921 (in progress), **M.**
83. Bulletin of the Board of Celtic Studies, London, 1921 (in progress).
84. Bulletin Dominion Museum, Wellington, N.Z., 1904 (in progress), **J.**
I 85. Bulletin of the Bureau of American Ethnology, Washington, 1903 (in progress).
I 86. Bulletin of the United States National Museum, Washington, 1914 (in progress).
86G. Bulletin of the Public Museum, Milwaukee, 1919 (in progress).
I 88. Bulletin de la Société préhistorique française, Paris, 1908 (in progress), **M.**
89. Bulletin de la Statistique générale de la France, Paris, 1911–27.
I 90. Bulletin de l'Institut de Sociologie Solvay, Brussels, 1910–14, continued as Revue.
90C. Bulletin of the U.S.A. Geological Survey, Washington, 1893–1903.
90F. Bulletin of the Bernice Pauahi Bishop Museum, Honolulu, 1923 (in progress).
I 90H. Bulletin of the American Museum of Natural History, New York, 1897–1907.
90K. Bulletin of the Archæological Survey of Nubia, Cairo, 1908–11.
I 90R. Bulletin de l'Académie d'Hippone, Bone, 1868.
90T. Bulletin de l'Université de l'Asie Centrale, Tashkent, 1925 (in progress).
I 90V. Bulletin of the Free Museum of Science and Art, University of Pennsylvania, Philadelphia, 1897–1902.
I 91. Bulletin de la Société r. belge de Géographie, Brussels, 1904 (in progress), **M.**
I 92. Bulletin de la Société belge d'Études coloniales, Brussels, 1902–19.
93. Bulletin de la Classe des Sciences, R. Acad. belge, Brussels, 1901–29.
I 94. Bulletin Agricole du Congo belge, London, 1915–17.
I 95. Bulletin de la Société d'Anthropologie de Lyons, 1881-1923, continued as Annales de la Société Linnéenne de Lyon.
I 96. Bulletin de la Société polymathique de Morbihan, Vannes, 1883–1921.
I 96D. Bulletin of the Northern Territory, Melbourne, 1912–13.
I 96F. Bulletin de la Société khédiviale de Géographie, Cairo, 1898–1912, continued as Bulletin de la Société sultanieh de Géographie.
I 96G. Bulletin of the Phillips Academy, Andover, Mass., 1904–12.

96N. Bulletin de la Société ethnologique de Paris, 1846–7.

I 96P. Bulletin de l'Académie royale des Sciences, des Lettres, et des Beaux-Arts, Brussels, 1893–9.

I 96R. Bulletin de l'École française d'Extrême-Orient, Hanoi, 1901–2.

96S. Bulletin The Museum of Far Eastern Antiquities (Östasiatiska Samlingarna) (in progress), **M.**

96T. Bulletins de la Société d'Anthropologie de Paris, 1860–99, continued as Bulletins et Mémoires de la Société d'Anthropologie de Paris.

I 97. Bulletin de la Société de Borda, Dax, 1894–1915.

I 97G. Bulletin North Queensland Ethnography, Brisbane, 1901-05.

97K. Bulletin de la Société d'Étude des Formes Humaines, Paris, 1927 (in progress).

97N. Bulletin de l'Institut Archéologique Bulgare, Sofia, 1921 (in progress). **J.**

97S. Bulletin du Musée de Georgie, Tiflis, 1926 (in progress), **M.**

98. Bulletin de la Société neuchâteloise de Géographie, Neuchâtel, 1891 (in progress), **J.**

I 99. Bulletin de la Société sultanieh de Géographie, Cairo, 1917–22, continued as Bulletin de la Société royale de Géographie d'Egypte.

I 100. Bulletin du Comité d'Études Historiques . . . de l'Afrique Occidentale française, Paris, 1918 (in progress), **M.**

101. Bulletins et Mémoires de la Société d'Anthropologie de Paris, 1900 (in progress), **J.**

102. Bulletins et Mémoires de la Société d'Anthropologie de Bruxelles, 1882–1914. continued as Bulletins de la Société d'Anthropologie de Bruxelles.

I 103. Bulletin internationale de l'Académie des Sciences, Krakow, 1891 (in progress), **J.**

104. Bulletins de la Société impériale des Naturalistes, Moscow, 1868–1914, continued as Bulletins de la Société des Naturalistes, Moscow, 1917–29.

Bulletin. *See also* under Izvestia.

105. Bulletins de la Société des Études Océaniennes, Tahiti, 1917 (in progress), **M.**

105D. Bulletin de la Société royale de Géographie d'Egypte, Cairo, 1923 (in progress). **J.**

105H. Bulletins de la Société d'Anthropologie de Bruxelles, 1919 (in progress), **J.**

105K. Bulletin of the Malta Museum, 1929 (in progress).

Canadian Department of Mines, Geological Survey. *See* under Reports, Memoirs, Museum Bulletins.

106. Catalogue of Polish Scientific Literature, Krakow, 1901–11.

I 106D. Canadian Journal of Science, Literature and History, The, Toronto, 1856-78, continued as the Proceedings of the Canadian Institute.

I 107. Central-Blatt für Anthropologie, Jena, 1896–1912.

107F. Census of New Zealand Reports, Wellington, N.Z., 1871-1916.

I 108. Český Lid, Prague, 1892–4.

I 109. Ceylon Antiquary and Literary Register, Colombo, 1915–24.

110. Ceylon Journal of Science, Colombo, 1924 (in progress).

111. Church Missionary Review, London, 1901–27.

111D. Climate, London, 1902–5.

I 112. Columbia University Contributions to Anthropology, New York, 1913 (in progress). **J.**

I 113. Congrès International d'Anthropologie et d'Archéologie préhistoriques. Comptes-rendus, various towns, 1868–92, 1906, 1912.

I 114. Congrès International des Américanistes. Comptes-rendus, various centres, 1877, 1904, 1910–15, 1924.

115. Congrès préhistorique de France, various towns, 1905–14.

I 116. Contributions from the Museum of the American Indian, Heye Foundation, New York, 1913 (in progress). **J.**

116c. Contributions to North American Ethnology, U.S.A. Geological Survey, Washington, 1877–93.

117. China Journal of Science and Arts, Shanghai, 1925 (in progress), **M.**

118. Congo, Brussels, 1920 (in progress), by subscription.

I 118s. Current Anthropological Literature, Lancaster Pa., 1912–13

I 119. Djava, Weltevreden, 1921 (in progress), **M.**

I 119s. Dolgozatok (Travaux de l'Institut Archéologique de l'Université François-Joseph), Szeged, 1911 (in progress). **M.**

120. Dominion Museum Monographs, Wellington, N.Z., 1921 (in progress), **J.**

I 120f. Drapers Company Research Memoirs (Biometric Series), London, 1904–19.

120h. Eesti Rahva Muuseumi Aastaraamat, Tartu (Dorpot), 1925 (in progress).

I 120s. Egypt Exploration Fund, Archæological Reports, London, 1892–1909.

I 121. Epigraphia Zeylanica, London, 1904 (in progress).

I 122. Epigraphica Indica, Calcutta, 1888 (in progress).

I 123. Essex Naturalist, The, Chelmsford, 1887–93.

124. Ethnographie, L', Paris, 1913 (in progress), **M.**

124f. Ethnologica, Leipzig, 1909 (in progress).

124p. Ethnologischer Anzeiger, Stuttgart, 1926 (in progress) by subscription.

124s. Ethnologisches Notizblatt, Berlin, 1895–1902.

I 125. Ethnos, Mexico, 1920 (in progress), **M.**

125a. Etnolog, 1926 (in progress), **M.**

125s. Eugenical News, New York, 1927 (in progress), **M.**

I 125v. Eugenics Laboratory Memoirs, London, 1907 (in progress).

I 126. Eugenics Review, London, 1909 (in progress), **M.**

126r. Eurasia Septentrionalis Antiqua, Helsingfors, 1927 (in progress), **M.**

I 127. Eusko-Folklore, Vitoria, 1921 (in progress).

129. Fataburen, Stockholm, 1906 (in progress), **J.**

130. Field Museum, Anthropological Series, Chicago, 1897 (in progress), **J.**

130d. Field Museum, Anthropology, Memoirs, Chicago, 1925 (in progress).

131. Finskt Museum, Manadsblad, Helsingfors, 1902 (in progress), **M.**

132. Folklore Record and Folklore Journal, 1868–89, continued as Folklore, London, 1890 (in progress), **J.**

133. Fornvännen, Stockholm, 1906 (in progress), **M.**

134. Genava, Geneva, 1924 (in progress), **M.**

Geological Survey of China. *See* under Palæontologia Sinica.

I 135. Geographical Journal, London, 1831 (in progress), **M.**

I 135D. Geographical Review, New York, 1929 (in progress), **J.**

136. Géographie, La, Paris, 1921 (in progress), **M.**

I 136H. Giornale di Scienze ed Economiche, Palermo, 1866–77.

I 137. Globus, Brunswick, 1901–10.

138. Gold Coast Review, Accra, 1925 (in progress), **M.**

I 139. Hakluyt Society's Publications, London, 1859 (in progress), by subscription.

140. Hereditas, Lund, 1920 (in progress), by subscription.

I 140A. Hespéris, 1928 (in progress), **J.**

I 140C. Hibbert Journal, The, London, 1914–16.

140E. History of the Berwickshire Naturalists' Club, Alnwick, 1890–1910.

I 140N. Homme, L', Paris, 1885–7.

I 141. Hessische Blätter für Volkskunde, Giessen, 1905 (in progress), **J.**

142. Handlingar, Stockholm, 1922 (in progress).

142G. Human Biology, Baltimore, 1929 (in progress), **M.**

143. Inca, Lima, 1923 (in progress), **J.**

I 144. Indian Antiquary, Bombay, 1885 (in progress), **J.**

145. Indian Notes and Monographs, Heye Foundation, New York, 1920 (in progress).

146. Internationales Archiv für Ethnographie, Leiden, 1888 (in progress), **J.**

147. International Journal of American Linguistics, New York, 1917 (in progress).

I 148. International Journal of Psycho-Analysis, London, 1922 (in progress), **M.**

International Congresses. *See* Congrès International.

148C. International Catalogue of Scientific Literature, London, 1903–17.

148M. Ipek, Leipzig, 1925 (in progress) by subscription.

149. Izvestia Imp. Obschestva Lubitelei 'Estestvoznania, Antropologii, i Etnografii, 1878–1911, Moscow University.

150. Izvestia Imp. Akademii Nauk, St. Petersburg, 1894–1915, continued as Izvestia Rosskoi Akademii Nauk, Leningrad, 1924 (in progress), **J.**

Izvestia Bulgarskia Arkheologicheski Institut. *See* under Bulletin de l'Institut Archéologique Bulgare.

150E. Izvestia, University of Kazan, 1919 (in progress).

I 151. Jahresschrift für die Vorgeschichte der sachsisch-thüringischen Länder, Halle, 1901 (in progress), **J.**

152. Jaarboek van de k. Akademie van Wetenschappen, Amsterdam, 1891 (in progress), **J.**

153. Jahresberichte der schweiz. Gesellschaft für Urgeschichte, Aarau, 1910 (in progress), **M.**

153E. Jahresberichte, Naturhistorische Gesellschaft, Nürnberg, 1900 (in progress).

I 154. Jahresberichte des Vereins für Erdkunde, Dresden, 1870–1901.

I 155. Jahresberichte der geographischen Gesellschaft. Bern. 1885-1902.
I 155E. Jahresberichte des Vereins für Erdkunde, Metz. 1879–1912.
I 155M. Jahresberichte der geographischen Gesellschaft in München. 1896–1903.
I 155P. Jahresberichte der geographisch-ethnographischen Gesellschaft in Zürich. 1909–10.
I 155R. Jahrbuch der Gesellschaft fur lothringische Geschichte und Altertumskunde, Metz, 1906–7.
I 155S. Japan Journal of Medical Sciences, Tokyo, 1922 (in progress).
156. Jahrbuch für Altertumskunde, Vienna, 1907–13.
157. Jahrbuch des städtischen Museums für Völkerkunde. Leipzig, 1906 (in progress). **J.**
158. Jahrbuch der asiatischen Kunst, Leipzig, 1924 (in progress).
160. Journal of the African Society, London, 1901 (in progress), **J.**
I 161. Journal of the East India Association, London, 1895–1929.
162. Journal of Hellenic Studies, London, 1880 (in progress). **J.**
163. Journal of Roman Studies, London, 1911 (in progress), by subscription.
I 164. Journal of the Royal Asiatic Society, London, 1847–52, 1860 (in progress). **J.**
165. Journal of the Royal Statistical Society, London, 1888–1929
166. Journal of the Royal United Service Institution, London, 1900–19.
167. Journal of Egyptian Archæology, London, 1914 (in progress). **J.**
168. Journal of the Gipsy Lore Society, Liverpool. 1908 (in progress), **M.**
I 169. Journal of Genetics, Cambridge, 1924 (in progress), by subscription.
I 170. Journal of the Royal Society of Arts, London, 1897–8.
I 171. Journal of Mental Science, London, 1857–1903.
I 172. Journal of the Royal Institute of Cornwall, Truro, 1866 (in progress), **J.**
173. Journal of the Manchester Egyptian and Oriental Society, 1912 (in progress).
I 174. Journal of the Royal Society of Antiquaries of Ireland. Dublin. 1887 (in progress), **J.**
175. Journal of the Society of Oriental Research, Bryn Mawr, Pa., 1925 (in progress), **M.**
I 176. Journal of American Folklore, New York, 1914 (in progress). **J.**
177. Journal of Heredity, Baltimore, 1924 (in progress), **J.**
I 178. Journal of American Oriental Society, New Haven, 1843–66.
179. Journal of the Anthropological Society of Bombay, 1886 (in progress), **J.**
180. Journal of the Asiatic Society of Bengal, Calcutta, 1861 (in progress), **J.**
I 181. Journal of the Royal Asiatic Society, Bombay, 1841 (in progress). **J.**
I 182. Journal of the Royal Asiatic Society, Straits (now Malayan) Branch, Singapore, 1882 (in progress), **J.**
I 183. Journal of the Royal Asiatic Society, North China Branch, Shanghai, 1859 (in progress), **J.**
184. Journal of the Bihar and Orissa Research Society, Ranchi, 1915 (in progress), **J.**
I 185. Journal of the Burma Research Society, Rangoon, 1922 (in progress), **J.**
186. Journal of the Punjab Historical Society, Lahore, 1911–16.
186c Journal of the Ethnological Society of London, 1848–56, 1869–70.
I 187. Journal of the Ceylon Branch, Royal Asiatic Society, Colombo, 1845–1919.
I 189. Journal of the Siam Society, Bangkok, 1904 (in progress), **M.**

190. Journal of the Department of Letters, Calcutta University. 1920 (in progress). **J.**

190C. Journal of the Hyderabad Archæological Society, Bombay, 1916–20.

I 190E. Journal of American Ethnology and Archæology, New York. 1891–2.

191. Journal of the Anthropological Society of Tokyo, 1897 (in progress). **J.**

I 191A. Journal of the East Africa and Uganda Natural History Society, London 1912 (in progress). **M.**

I 191B. Journal of the Indian Archipelago, Singapore. 1848–57.

I 192. Journal of the College of Sciences, Imperial University of Japan, Tokyo. 1900–22.

I 193. Journal of the Royal Agricultural Society, British Guiana, Demerara, 1882–96.

I 194. Journal of the Polynesian Society, New Plymouth, 1898 (in progress), **J.**

I 195. Journal and Proceedings of the Royal Society of New South Wales, Sydney, 1876 (in progress), **J.**

196. Journal de la Société des Américanistes de Paris. 1896 (in progress), **J.**

Journal russe anthropologique *See* Russian Anthropological Journal.

I 197. Journal de Psychologie, Paris. 1920–5.

197C. Journal of the Anthropological Institute of Great Britain and Ireland. London. 1871–1906, continued as Journal of the Royal Anthropological Institute of Great Britain and Ireland. London, 1907 (in progress)

197D. Journal of the South-West Africa Scientific Society, Windhoek, 1925 (in progress).

I 198. Katalog des ethnographischen Reichsmuseums, Leiden, 1910 (in progress).

199. Knowledge, London. 1911–17.

200. Kolonial Instituut. Jaarverslag and other publications. Amsterdam, 1914 (in progress). **J.**

200E. Korean Repository, Seoul, 1896–7.

200F. Kgl. Norske Videnskabers Selskabs Skrifter Trondheim. 1902 (in progress). **M.**

202. Lancet. London. 1925 (in progress), **M.**

203. Language. Baltimore, 1925 (in progress), **M.**

203D. Language Dissertations. Philadelphia. 1927 (in progress).

203F. Language Monographs, Philadelphia, 1925 (in progress).

203M. Leopoldina, Leipzig, 1926 (in progress), **J.**

I 204. L'Homme préhistorique. Paris, 1903–11.

205. Lud, Lwów. 1922 (in progress). **M.**

205A. Lud Stowiański. **J.**

205S. Man. London. 1901 (in progress).

206. Man in India, Ranchi. 1921 (in progress), **M.**

I 207. Manadsblad, Kongl. Vitterhets, Historie och Antikvitets Akademiens, Stockholm, 1872–1905.

208. Mannus. Leipzig, 1919 (in progress).

I 209. Materjaly antropologiczno-archeologiczne i etnograficzne, Krakow, 1896 (in progress).

I 210. Matériaux pour l'histoire primitive et naturelle de l'homme, Paris, 1870–87, continued as L'Anthropologie

I 210E Masonic Bibliophile, The. Cincinnati, 1912–13.

I 210H. Mathematische und Naturwissenchaftliche Berichte aus Ungarn. Berlin. 1889–1913.

I 210N. Meddelanden från Nordiska Museet. Stockholm. 1897–1903. continued as Fataburen.

I 210S. Meddelanden från Östergotlands Fornminnes och Musei Förening. Uppsala. 1903 (in progress), **M.**

211. Meddelelser om Danmarks Antropologi. Copenhagen. 1907 (in progress), **M.**

212. Mélanges de la Faculté orientale, continued as Mélanges de l'Université de St. Joseph, Beyrouth. 1906 (in progress). **M.**

I 214. Melusine. Paris, 1890–1901.

I 215. Mémoires de l'Académie royale belge. Brussels. 1904 (in progress).

216. Mémoires de la Société des Antiquaires du Nord. Copenhagen, 1836 (in progress). **J.**

217. Mémoires de la Société d'Anthropologie de Paris, 1860–98. continued as Bulletins et Mémoires de la Société d'Anthropologie de Paris.

217E. Mémoires de la Société ethnologique. de Paris, 1841–5.

217N. Mémoires couronnés de l'Académie royale belge. Brussels. 1889–1905.

Mémoires de la Société royale du Canada. *See* under Proceedings and Transactions of the Royal Society of Canada.

I 218. Memorias de la R. Academia de Ciencias y Artes. Barcelona. 1919–25.

I 218H. Memorias y Revista de la Sociedad Cientifica "Antonio Alzate," Mexico, 1912–22.

219. Memorias de la Junta para Ampliación de Estudios, etc.. Madrid, 1914–21.

220. Memorias de la Junta superior de Excavaciones, etc.. Madrid. 1916 (in progress), **J.**

221. Memorias de la Academia Nacional de Historia. Quito. 1922.

221S. Memorie della R. Accademia delle Scienze. Bologna, 1907–08.

222. Memoirs of the American Anthropological Society, Lancaster. 1905 (in progress).

I 223. Memoirs of the American Museum of Natural History, New York, 1900–10.

224. Memoirs of the Bernice Pauahi Bishop Museum. Honolulu. 1899 (in progress), **J.**

225. Memoirs of the Peabody Museum. Cambridge. Mass., 1896 (in progress). **J.**

226. Memoirs of the Asiatic Society of Bengal. Calcutta, 1905 (in progress). **M.**

I 227. Memoirs of the South African Institute for Medical Research. Johannesburg. 1913–29

228. Memoirs of the Queensland Museum, Brisbane. 1908 (in progress), **M.**

229. Memoirs of the Archæological Survey of India. Calcutta. 1919 (in progress). **J.**

229E. Memoirs of the Geological Survey of the Canadian Department of Mines, Ottawa. 1914–16.

229G. Memoirs read before the Anthropological Society of London, 1863–69

229R. Mensch en Maatschappij, Groningen. 1929 (in progress). **M.**

I 230. Missions Belges, Brussels, 1901–27.

231. Mitra, Vienna, 1914.

232. Mitteilungen der anthropologischen Gesellschaft in Wien, 1882 (in progress), **J.**

I 233. Mitteilungen der Gesellschaft für Erdkunde, Leipzig, 1873 (in progress), **M.**

234. Mitteilungen aus dem Museum für Volkerkunde, Hamburg, 1905 (in progress), **J.**
235. Mitteilungen des Seminars für orientalische Sprachen, Berlin, 1898 (in progress), **J.**
I 235H. Mitteilungen des Vereins für Erdkunde, Dresden, 1905 (in progress), **M.**
I 235K. Mitteilungen der deutschen Gesellschaft für Natur und Volkerkunde Ostasiens, Tokyo, 1926 (in progress). **M.**
235M. Mitteilungen des anthropologischen Vereins in Schleswig-Holstein, Kiel, 1889–1900.
I 235P. Mitteilungen der Erdbeben-Kommission der k. Akad., Wien, 1901–13.
I 235S. Mitteilungen der vorderasiatischen Gesellschaft, Berlin, 1898–1922.
I 235T. Mitteilungen aus dem Provinzial-Museum der Provinz Sachsen, Halle, 1894–1912.
236. Mitteilungen der prähistorischen Kommission der k. Akad. Wien, 1887–1912.
I 237. Mitteilungen aus der medizinischen Fakultät der k. Universität, Tokyo, 1901 (in progress).
237E. Mitteilungen der geographischen Gesellschaft in Wien, 1890–2.
I 237G. Mitteilungen der geographischen Gesellschaft in München, 1904–14.
238. Monographs of the Dominion Museum, Wellington, N.Z., 1922 (in progress), **J.**
238C. Monographs of the U.S.A. Geological Survey, Washington, 1900–3.
239. Museum Journal, Philadelphia, 1910 (in progress), **J.**
239C. Museum Bulletins of the Geological Survey of the Canadian Department of Mines, Ottawa, 1913–23.

239S. Nada, Salisbury, S.A., 1923 (in progress), sent for review.
239V. Nagoya Journal of Medical Science, 1926 (in progress).
240. Narodna Starina, Zagreb, 1922 (in progress), **M.**
241. Naturalist, Hull, 1901 (in progress), **M.**
242. Nature, London, 1869 (in progress), **J.**
243. Nature, La, Paris, 1900 (in progress), **M.**
I 244. Nederlandsch-Indië oud en nieuw, Amsterdam, 1917–22.
I 245. New Zealand Journal of Science and Technology, Wellington, 1918 (in progress).
I 246. New Zealand Medical Journal, Wellington, 1900 (in progress).
I 247. Niederlausitzer Mitteilungen, Güben, 1890–1913.
I 248. Nordiske Fortidsminder, Copenhagen, 1890–1923.
248E. North Asia, Moscow, 1925 (in progress), **M.**
I 248S. Nova Acta, Academiæ C.L.C.G. Naturæ Curiosorum, Halle, 1890–1913.
Notizie degli Scavi di Antichità. *See* under Atti della Reale Accademia dei Lincei.
I 250. Notulen van de Algemiene en Directievergadering, Batavia, 1884–1921.
251. Nyland, Helsingfors, 1887–9.

I 252. Obzor, Prague, 1922 (in progress), **M.**
I 253. Occasional Papers of the Bernice Pauahi Bishop Museum, Honolulu, 1907–23
I 254. Open Court, Chicago, 1897–1918.
I 254G. Oriental Institute Communications, Chicago, 1927 (in progress), **J.** and **M.**
I 255. Orientalisches Archiv, Leipzig, 1911–13.

I 256. Oudheidkundige Dienst in Nederlandsch-Indië, Batavia, 1912 (in progress), **J.**

257. Oudheidkundige Mededeelingen uit 's Rijksmuseum, Leiden, 1907 (in progress). **M.**

Palestine Exploration Fund. *See* Quarterly Statement.

I 257A. Palestine Exploration Fund Annual, London. 1911–13.

258. Papers of the Peabody Museum, Cambridge. Mass., 1888 (in progress).

258D. Palæontologia Sinica. Geological Survey of China, Peking, 1925 (in progress). **J.**

258E. Palestine Museum Bulletins, Jerusalem. 1927 (in progress).

258F. Památky Archeologické, Prague, 1924 (in progress), **J.**

I 258G. Papers and Proceedings of the Royal Society of Tasmania, Hobart, 1893–1918.

I 259. Periodical. The. London. 1906 (in progress).

I 260. Petermanns Mitteilungen, Gotha, 1900–14, 1921.

I 261. Philippine Journal of Science, Manila, 1910 (in progress), **J.**

261E. Piemineklu Valdes Materialu Krajum. Riga. 1926 (in progress), **M.**

I 262. Popular Science Monthly. New York, 1896–1904.

I 263. Portugal em Africa, Lisbon, 1895–1910.

264. Portugalia, Lisbon, 1899–1908.

265. Prace i Materialy, Krakow, 1920 (in progress).

I 266. Πρακτικὰ τῆς Ἀρχαιολογικῆς Ἑταιρείας, Athens, 1901 (in progress).

267. Prahistorische Blätter, Munich, 1902–7.

267A. Prähistorische Zeitschrift, Berlin, 1909 (in progress), **J.**

I 268. Pravek, Kojetin, 1903–11, 1926 (in progress), **M.**

I 268E. Populära Etnologiska Skrifter, Stockholm, 1911–13.

269. Proceedings of the Society of Biblical Archæology, London, 1873–1914, now merged in J.R.A.S.

270. Proceedings of the Geologists' Association, London, 1859 (in progress), **J.**

271. Proceedings of the Royal Society, London, 1863 (in progress), **J.**

272. Proceedings of the Society of Antiquaries, London, 1859–1920, continued as Antiquaries' Journal, q.v.

273. Proceedings of the Prehistoric Society of East Anglia, London, 1908 (in progress).

I 274. Proceedings of the Philosophical Society of Glasgow, 1892–1929.

I 275. Proceedings of the Royal Society of Edinburgh, 1893 (in progress), **J.**

I 276. Proceedings of the Society of Antiquaries of Scotland, Edinburgh, 1870 (in progress), **J.**

276D. Proceedings of the Royal Academy of Sciences, Amsterdam, 1900 (in progress), **J.**

I 276E. Proceedings of the Royal Geographical Society, London, 1856–94.

I 276G. Proceedings of the Royal Geographical Society of Australasia, Adelaide, 1890–1909.

I 276J. Proceedings of the Canadian Institute. Toronto, 1879–1904.

I 276M. Proceedings of the Davenport Academy of Sciences, Davenport, Iowa, U.S.A., 1901–14.

I 276P. Proceedings of the Philological Society, London, 1842–53.

276S. Proceedings of the American Association for the Advancement of Science. Salem. 1875–1900.

277. Proceedings of the Somersetshire Archæological Society, Taunton, 1895 (in progress), **J.**

I 277c. Proceedings of the Anthropological Society, University of Aberdeen, 1899–1908.

277f. Proceedings of the Royal Colonial Institute, London, 1869–1915.

I 278. Proceedings of the Royal Irish Academy, Dublin, 1891 (in progress), **J.**

I 279. Proceedings (Scientific) of the Royal Society, Dublin, 1900–26.

280. Proceedings of the American Philosophical Society, Philadelphia, 1900 (in progress), **M.**

281. Proceedings of the National Academy of Sciences, Boston, 1915–1929

282. Proceedings of the United States National Museum, Washington, 1900 (in progress).

I 283. Proceedings of the Royal Society of Victoria, Melbourne, 1889 (in progress), **J.**

284. Proceedings of the Asiatic Society of Bengal, Calcutta, 1867–1904.

285. Proceedings of the Rhodesia Science Association, Bulawayo, 1899 (in progress), **M.**

I 286. Proceedings and Transactions of the Nova Scotia Institute, Halifax, 1889 (in progress).

I 287. Proceedings and Transactions of the Royal Society of Canada, Toronto, 1882 (in progress), **J.**

288. Przeglad Archeologiczny, Poznan, 1919 (in progress), **M.**

I 288m. Psyche, London, 1923 (in progress).

I 288s. Publications du Musée d'Anthropologie et d'Ethnographie, Leningrad, 1923 (in progress).

Publications. Académie des Sciences d'Ukraine. *See* under Académie des Sciences d'Ukraine.

288v. Publications of the American Ethnological Society, Leiden, 1907-19.

289. Polytechnisches Central-Blatt, Leipzig, 1843–6.

290. Quarterly Journal of the Mythic Society, Bangalore, 1920 (in progress), **M.**

291. Quarterly Statement of the Palestine Exploration Fund, London, 1873 (in progress), **J.**

I 292. Rapports annuels, Musée national suisse, Zürich, 1906 (in progress), **J.**

292c. Rapport sur l'Activité de l'Académie hongroise des Sciences, Buda-Pest, 1891–1911.

I 292e. Rapporten van de Comissie in Nederlandsch-Indië voor Oudheidkundig Onderzoek, The Hague, 1901–14.

I 293. Rassegna di Studi Sessuali, Rome, 1921 (in progress), **M.**

I 294. Records of the Australian Museum, Sydney, 1891 (in progress), **J.**

295. Records of the Past, Washington, 1905–13.

I 296. Reliquary, The, London, 1895–1910.

I 297. Rendiconti della R. Accademia dei Lincei, Rome, 1900 (in progress).

I 298. Répertoire d'Art et d'Archéologie, Paris, 1910 (in progress), **J.**

I 299. Reports of the British Association, London, 1831 (in progress).

300. Reports and Transactions of the Devonshire Association, Plymouth, 1883 (in progress). **M.**

I 300C. Reports of the Canadian Arctic Expedition, 1913–18, Ottawa, 1919–23.

300E. Reports of the Archæological Survey of Nubia, Cairo, 1907–10.

I 300N. Reports of the Geological Survey of the Canadian Department of Mines, Ottawa, 1912 (in progress).

300S. Reports of the Australian Museum, Legislative Assembly, N.S.W., Sydney, 1895 (in progress).

I 301. Reports of the Peabody Museum, Cambridge, Mass., 1868 (in progress).

I 303. Revista del Archivo Nacional del Peru, Lima, 1920–6.

I 304. Revista del Museu de la Plata, Buenos Aires, 1890 (in progress), **J.**

I 304E. Revista Historica del Peru, Lima, 1906 8.

304S. Revista de Etnologia, Arqueologia y Linguistica, San Salvador, 1925 (in progress), **J.**

I 305. Revista de Menorca, Mahon, 1922 (in progress), **M.**

306. Revista di Psiquatria y Disciplinas Conexas, Lima, 1922 (in progress), **M.**

I 307. Revista de Sciencias naturaes, Porto, 1889–98.

I 308. Revista do Museu Paulista, São Paulo, 1919 (in progress).

309. Revue anthropologique, Paris, 1911 (in progress), continuation of Revue mensuelle de l'école d'Anthropologie, 1890–1910, **J.**

Revue d'anthropologie, Paris, 1878–89, continued as L'Anthropologie.

310. Revue d'ethnographie, Paris, 1882–9, continued as L'Anthropologie.

I 311 Revue des Études ethnographiques et sociologiques, 1908–9, continued as Revue d'ethnographie et de sociologie, Paris, 1910–14.

I 312. Revue des traditions populaires, 1901–19, continued as Revue d'ethnographie et des traditions populaires, Paris, 1920 (in progress), **M.**

I 313. Revue de l'histoire des religions, Paris, 1900 (in progress), **J.**

I 314. Revue préhistorique, Paris, 1906–11

315. Revue congolaise, Brussels, 1910–13.

I 316. Revue de l'Institut de Sociologie Solvay, Brussels, 1920 (in progress), **M.**

317. Revue scientifique, La, Paris, 1871–9.

I 318. Revue internationale des Études basques, San Sebastian, 1922 (in progress), **J.**

I 318E. Revue internationale des Sciences, Paris, 1878–81.

318H. Revue scientifique (Revue rose), Paris, 1894–1902.

I 318M. Revue orientale et américaine, Paris, 1859–62.

318R. Revue néo-scolastique, Louvain, 1895–8.

I 319. Revue tunisienne, Tunis, 1897–1907.

320. Rivista di antropologia, Rome, 1894 (in progress), **J.**

I 321. Rivista archeologica della Provincia di Como, Milan, 1901–17.

I 322. Rivista italiana di Sociologica, Rome, 1897–1921.

I 323. Russian Anthropological Journal, Moscow, 1901 (in progress), **J.**

324. Saga Book of the Viking Society, London, 1896–1912.

I 324S. St. John's Card, Margate, 1899–1922.

I 325. Sarawak Museum Journal, Singapore, 1911–13.
I 325E. Schlesiens Vorzeit in Bild und Schrift, Breslau, 1900–24.
325H. School of Hygiene and Public Health, Johns Hopkins University, Baltimore, 1919 (in progress).
I 325R. Science of Man, Sydney, 1898–1913.
I 325T. Samfundet för Nordiska Museets, Stockholm, 1893–1901.
326. Schriften der phys.-ökon. Gesellschaft, Königsberg, 1893–1912.
327. Schweizerisches Archiv für Volks-kunde, Basel, 1901 (in progress), **M.**
328. Science, New York, 1904–15.
I 329. Science Progress, London, 1894–8; 1917 (in progress), **J.**
330. Science Reports of the Tôhoku Imperial University, Sendai, 1912 (in progress).
331. Scientia, Bologna, 1921 (in progress), **M.**
332. Scottish Geographical Magazine, Edinburgh, 1885 (in progress), **J.**
333. Sierra Leone Studies, Freetown, 1919 (in progress).
334. Sitzungsberichte der [k.] Akademie der Wissenschaften in Wien, 1893 (in progress), **J.**
I 335. Sitzungsberichte der Naturforscher-Gesellschaft, Dorpat, 1900 (in progress), **J.**
I 336. Smithsonian Miscellaneous Collections, Washington, 1853 (in progress).
I 338. Sociological Review, London, 1908 (in progress), **M.**
South African Institute for Medical Research. *See* under Memoirs.
I 339. South American Missionary Magazine, London, 1901–27.
I 340. Southern Cross Log, London, 1909–27.
I 340E. Starinar, Belgrade, 1884 (in progress).
340R. Statistical Registers, Western Australia, Perth, 1867 (in progress).
341. Subject Index to Periodicals, London, 1914–29
342. Sudan Notes and Records, Khartoum, 1918 (in progress), **M.**
343. Suomen Muinaismuistoyhdistyksen Aikakauskirja (SMYA), Helsingfors, 1907 (in progress), **J.**
Suomen Museo. *See* under Finkst Museum, Månadsblad.
I 344. Svenska Landesmal, Uppsala, 1896 (in progress), **J.**
345. Swiatowit, Warsaw, 1904–13.

I 346. Tijdschrift voor Indische Taal, Land en Volkenkunde, Batavia, 1884 (in progress), **M.**
I 346E. Tijdschrift Van Het K. Ned. Aardrijkskundig Genootschap, Leiden, 1928 (in progress), **M.**
347. Trabalhos da Sociedade Portuguêsa di Antropologia e Etnologia, Porto, 1919 (in progress), **M.**
I 348. Transactions of the Royal Society of Literature, London, 1892–1929.
I 348E. Transactions of the American Ethnological Society, New York, 1845-53.
349. Transactions and Proceedings of the Japan Society, London, 1892 (in progress), **J.**
I 350. Transactions of the Essex Archæological Society, Colchester, 1903 (in progress).
I 351. Transactions of the Glasgow Archæological Society, 1859 (in progress).

I 352. Transactions of the Shropshire Archæological Society, Shrewsbury, 1880–90.

I 352E. Transactions of the Historic Society of Lancashire and Cheshire, Liverpool 1853–73.

I 352G. Transactions of the South African Philosophical Society, Cape Town, 1877–1908 continued as Transactions of the Royal Society of South Africa.

352K. Transactions of the Royal Canadian Institute, Toronto, 1890 (in progress). **J.**

I 352N. Transactions of the Literary and Philosophical Society of Liverpool, London, 1889–1907.

I 352R. Transactions and Proceedings of the Royal Society of South Australia, Adelaide, 1882–96.

352T. Transactions and Proceedings of the Royal Society of Victoria, Melbourne, 1874–88, continued as Proceedings of the Royal Society of Victoria.

I 352U. Transactions of the Royal Society of Victoria, Melbourne, 1889–1914.

I 352V. Transactions and Proceedings of the New Zealand Institute, Wellington, N.Z. 1868 (in progress), **J.**

353. Transactions of the Royal Society of Edinburgh, 1893 (in progress), **J.**

I 354. Transactions (Scientific) of the Royal Society of Dublin, 1893–1909.

355. Transactions of the Ethnological Society, London, 1861–69.

356. Transactions of the Royal Society of South Africa, Cape Town, 1909 (in progress), **J.**

I 357. Transactions of the Fijian Society, Suva, 1914 (in progress).

I 358. Transactions of the Asiatic Society of Japan, Yokohama, 1872–1920.

I 359. Tradiçao, A, Serpa (Portugal), 1900–3.

I 359P. Transactions of the Royal Irish Academy, Dublin, 1891–1903.

360. Ungarische Revue, Buda-Pest, 1888–95.

I 361. United Empire, London, 1910 (in progress), **J.**

University of California. Anthropological Publications. *See* under American Archæology.

University of Pennsylvania. Anthropological Publications. *See* under Anthropological Publications.

362E. University of Pennsylvania. Publications of the Babylonian Section, Philadelphia, 1911–17.

362H. University of Washington. Publications in Anthropology, 1920 (in progress). **M.**

362K. University of Sydney, Science Papers, 1909–20.

363. Upplands Fornminnenforeningers Tidskrift, Uppsala, 1869 (in progress), **J.**

I 364. Urgeschichtlicher Anzeiger, Vienna, 1924–5.

U.S.A. Geological Survey. *See* under Annual Reports, Bulletins, Monographs, and Contributions to North American Ethnology.

366. Verhandelingen van het Bat. Genootschap, Batavia, 1892 (in progress).

367. Verhandlungen der naturforschenden Gesellschaft in Basel, 1919 (in progress), **J.**

368. Veröffentlichungen des Museums für Völkerkunde zu Leipzig, 1907–22.

369. Veröffentlichungen des Völkermuseums, Frankfurt a/M., 1908–11.
I 369c. Veröffentlichungen des provinzialmuseums zu Halle, 1918 (in progress).
I 369h. Veröffentlichungen aus dem K. Museum für Völkerkunde, Berlin, 1882-1901.
370. Verslagen van de k. Akademie van Wetenschappen Amsterdam (in progress), **J.**
See also under Proceedings of Royal Academy of Sciences, Amsterdam.
I 370c. Verslag van den Directeur van de Rijks Ethnographisch Museum te Leiden. The Hague, 1899–1912.
I 371. Vie internationale, La, Paris, 1912–14.
372. Ville de Genève, Geneva, 1923, continued as Genava.
373. Vjesnik hrvatskoga arkeologickoga Druztva, Zagreb, 1879–1912.
I 373c. Volkskunde, Deventer, 1900–3.
I 373f. Volkskundliche Zeitschriftenschau, Leipzig, 1903–5.
373s. Volk und Rasse, Munich, 1926 (in progress), by subscription.
373v. Vorgeschichtliches Jahrbuch, Berlin, 1925 (in progress).

374. Wiadomosci Archeologiczne, Warsaw, 1920 (in progress), **J.**
375. Wiener Prähistorische Zeitschrift, Vienna, 1914 (in progress), **J.**
I 376. Wissenschaftliche Mitteilungen aus Bosnien und Herzegowina, Vienna, 1893–1912.

I 377. Ymer, Stockholm, 1881 (in progress), **J.**

I 378. Zeitschrift der deutschen Morgenländischen-Gesellschaft, Leipzig, 1879 (in progress), **J.**
379. Zeitschrift für Ethnologie, Berlin, 1869 (in progress), **J.**
380. Zeitschrift für Eingeborenen-Sprachen, Berlin, 1911 (in progress), by subscription.
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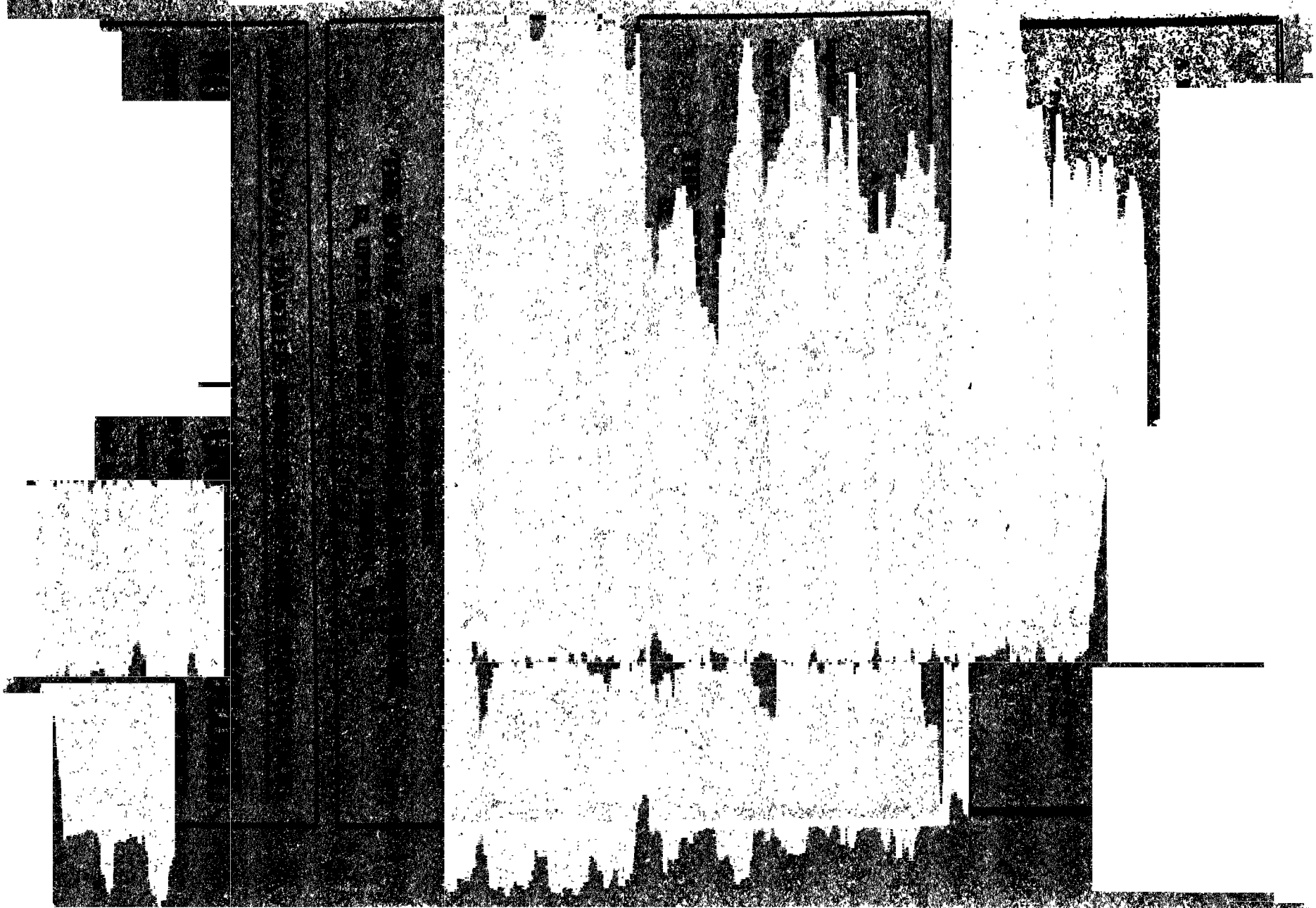
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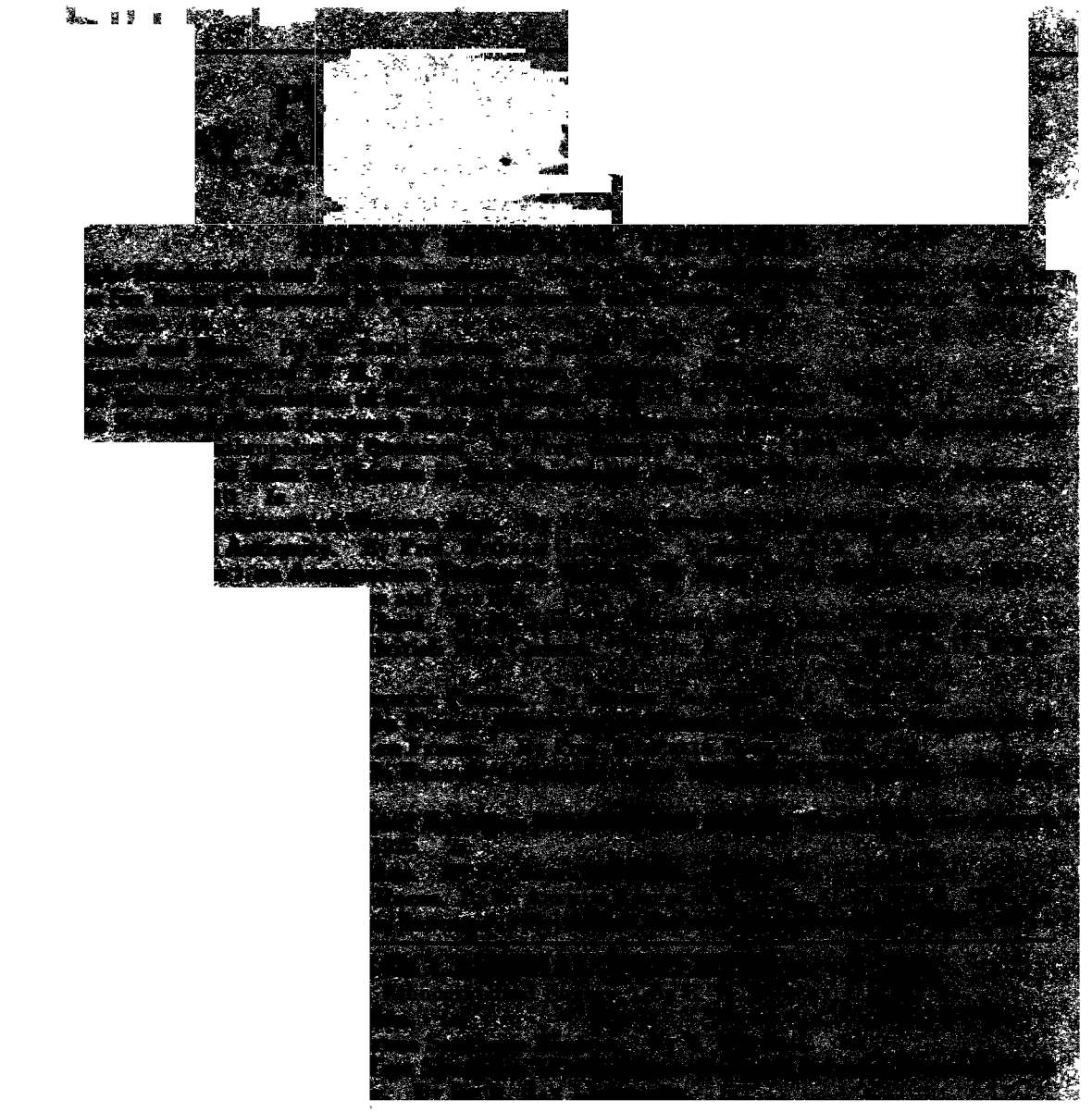
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